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THESIS

AN ANALYTICAL REVIEW OF THE MANAGEMENT OF
MODIFICATON FUNDS IN THE NAVAL AVIATION COMMUNITY

by

Lonsdale Clifford Mitchell

March 1981

Thesis Advisor: R. A. Bobulinski

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An Analytical Review of the Management of
Modification Funds in the Naval Aviation Community

by

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Submitted in partial fulfillment of the
requirements for the degree of

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from the

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This thesis reviews the organizational and managerial structures associated with the United States Navy's fiscal management of the modification of aircraft programs. The review is utilized to highlight the problems associated with the expenditure of appropriated funds in support of the modification effort. After reviewing the organizational, functional and structural areas that support the modification program, five areas are identified for corrective action and analysis. These are: a) inadequate control of funds, b) funding is approved too early, c) temporary reprogramming tends to become permanent, d) lack of understanding by the item managers, and e) inadequate program feedback. Several recommendations are made to improve the quality of funds management in the modification process. Among these recommendations were actions to improve funds control through "fencing" mechanisms, segregation of modification follow-on funds from replenishment funding, and to consciously reduce front-end funding of modification programs.

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TABLE OF ABBREVIATIONS AND ACRONYMS

A-3	Skywarrior Aircraft
A-4	Skyhawk Aircraft
ACCB	Aviation Configuration Control Board
ADM	Admiral
AIR-01	Deputy NAVAIR and Projects Director
AIR-102	Aircraft Modification Management Division, NAVAIR
AIR-04	Assistant Commander, Logistics and Fleet Support, NAVAIR
AIR-410	Logistics Management Division, NAVAIR
AIR-411	Maintenance Policy and Engineering Division, NAVAIR
AIR-412	Supply Policy and Management Division, NAVAIR
AIR-413	Weapons Training Division, NAVAIR
AIR-417	Ground Support Equipment Management Division, NAVAIR
AIR-08	Comptroller, NAVAIR
AIR-805	Procurement Budget Division, NAVAIR
APC	Air Project Coordinator
APML	Assistant Program Manager for Logistics
APN	Aircraft Procurement, Navy
ASO	Aviation Supply Office
BA	Budget Activity
CA	Configuration Audit
CC	Configuration Control
CCB	Configuration Control Board

CFA	Cognizant Field Activity
CI	Configuration Identification
CILOP	Conversion in Lieu of Procurement
CM	Configuration Management
CNO	Chief of Naval Operations
CSA	Configuration Status Accounting
DCN	Design Change Notice
DCNO	Deputy Chief of Naval Operations
DOD	Department of Defense
ECP	Engineering Change Proposal
ERA-3B	Electronic/Reconnaissance Configuration, Skywarrior Aircraft
F-4	Phantom Aircraft
F-8	Crusader Aircraft
F-14	Tomcat Aircraft
GSE	Ground Support Equipment
ILS	Integrated Logistic Support
ILSMT	Integrated Logistic Support Management Team
IM	Item Manager
LLT	Long Lead Time
LM	Logistics Manager
LSA	Logistics Support Analysis
MSD	Material Support Date
NALC	Naval Aviation Logistics Center
NATSF	Naval Aviation Technical Services Facility
NAVAIR	Naval Air Systems Command
NAVCOMP	Office of the Comptroller of the Navy
NAVMAT	Naval Material Command

NAVSUP	Naval Supply Systems Command
OMB	Office of Management and Budget
OP-50	Aviation Plans and Requirements Division, DCNO
OP-501	Program and Budget Branch, DCNO
OP-506	Aircraft Weapons Requirements Branch, DCNO
OP-508	Aviation Plans Branch, DCNO
OSD	Office of the Secretary of Defense
OSIP	Operational and Safety Improvement Program
PM	Program Manager
POM	Program Objectives Memorandum
PPBS	Planning, Programming and Budgeting System
PRS	Provisioning Requirements Statement
RA-3B	Reconnaissance Configuration, Skywarrior Aircraft
RADM	Rear Admiral
SDLM	Standard Depot Level Maintenance
SICR	Supply Item Change Record
SELP	Service Life Extension Program
SML	Support Material List
SSR	Supply Support Request
TPOM	Tentative Program Objectives Memorandum
VADM	Vice Admiral
WSM	Weapon System Manager

I. INTRODUCTION

A. BACKGROUND AND OVERVIEW OF THE MODIFICATION IN LIEU OF PROCUREMENT CONCEPT

From the earliest beginnings of an organized military, weaponry of the armed forces have been modified, and some form of documentation maintained. As technology has advanced and the complexity of weapon systems has increased, the modification and documentation requirements have increased [Ref. 1:1].

During a recent seminar at the Naval Postgraduate School, Vice Admiral (VADM) Wesley L. McDonald, United States Navy (USN), Deputy Chief of Naval Operations, Air Warfare (DCNO-AIR), pointed out that the primary factor associated with the increase in modifications and the resulting documentation was aligned to the affordability concept of developing and procuring new weapon systems. Within the limited resources provided to the USN, the only way to maintain the current posture of air defense was to procure new aircraft and to modify those in the inventory to the "state of the art". By modifying and modernizing existing weapon systems, a significant overall cost savings can be generated. However, VADM McDonald also pointed out the reality of this process; a point in time is reached where modification can no longer accommodate the technological advances and at the same time counter the threat imposed by the enemy [Ref. 2].

The modification of naval aircraft has become important from a management standpoint, as well as a readiness standpoint, as the services place greater emphasis on modernizing and upgrading current inventory weapon systems in lieu of procurement. Two primary examples of this philosophy are evidenced by the A-3 Sky Warrior and F-4 Phantom weapon systems, which

were introduced into fleet use in 1952 and 1956 respectively. Through a series of major modifications and service life extention programs, these two weapon systems have been maintained as viable fleet assets long past their original expected service life. Furthermore, with the advent of the mini-carrier, as discussed by VADM McDonald, the prospect of these two types of aircraft as well as the F-8 Crusader and A-4 Skyhawk remaining in the inventory in the future should be anticipated by those tasked to support them [Ref. 2].

Additional credibility is given to this prospect by both the Secretary of the Navy (SECNAV) and the Chief of Naval Operations (CNO). During testimony at the hearings before a Subcommittee of the Committee on Appropriations, House of Representatives, concerning the Department of Defense (DOD) appropriations for 1980, then SECNAV W. Graham Claytor, Jr. specifically addressed the area of affordability and modernization. In part he stated:

> "... Within modernization, we must decide whether to upgrade or replace, how much and what kind of research and development, and what quality and quantity of new forces and weapons to buy... Our biggest problem, as you all certainly know, has been in our procurement quantities. We simply have not been able to buy enough ships and aircraft to replace those lost from the fleet through retirement, and in the case of aircraft, attrition... Ship and aircraft procurements in this budget, and in those we expect for the next few years, are not adequate, if extended into the future, to sustain even our present depressed force levels. ... Examples of what is being done include the Service Life Extension Programs (SLEPs) which are avoiding much more costly replacement of many ships and aircraft... These are not new ideas, of course; they have always been part of our planning, but under present Defense acquisition policy, and the management directives we have issued to implement it, they will certainly receive renewed emphasis [Ref. 3:7-8].

The CNO, Admiral (ADM) Thomas B. Hayward, USN, pressed the increased need for awareness of the modification process during his testimony before the same subcommittee. His testimony regarding the need for modernization stated:

"... Three distinct aspects of modernization which interact with one another must be appreciated if the demands of fiscal discipline are to be applied intelligently. First, because we have a large investment in existing ships, aircraft, and weapon systems, and because major investments must be made to maintain and improve them, the Navy tends to change in an evolutionary manner. Second, we must invest in opportunities. These may be technological opportunities that increase overall capabilities, or they may be investments made to capitalize on opportunities offered by our potential opponent's unique characteristics and vulnerabilities. Third, because the U.S. Navy force structure is both long-lived and subject to block obsolescence, we need to predict long-range problems now in order to develop adequately the desired capabilities for our future force structure [Ref. 4:31].

As evidenced by the statements of VADM McDonald, Secretary Claytor, and ADM Hayward, the management of funds associated with the modification process has become more important to the Navy today, relative to the overall availability of technologically advanced, viable weapon systems. The high levels of review necessary to approve and implement changes to weapon systems bears this point out.

There are numerous instructions regarding controlling the changes and configuration of Naval aircraft. These are required to insure that modifications are done in a consistent manner, that they are technologically advancing the weapon system, and that they meet the safety of flight requirements. However, this author's review has shown that no guidance exists as to the actual management of the funds associated with the modification process. In this author's opinion, this condition has led to tight control in the engineering aspects of modification but limited or nonexistant control in the logistic and fiscal side.

B. PROBLEM DEFINITION

The author's preliminary research indicated that the lack of clearcut guidance in the administering of the funds associated with the modification process has caused the following problems in the accomplishment of various programs:

1. Modification not accomplished on a timely basis,
2. Modification funds appropriated, but program not accomplished,
3. Modification program accomplished but not logistically supported,
4. Modification funds appropriated, but spend on other than the designated aircraft or system, and
5. Modification funds appropriated, but returned to the Naval Air Systems Command (NAVAIR), since no definitized requirement existed.

In light of the magnitude of the funds appropriated for the modification process ($1.7 billion in 1980 [Ref. 5:94]) the above mentioned problems are unacceptable if the Navy is to maintain an air defense posture capable of meeting the threat from its opponents. The major questions that arise from this are how are modification funds managed within the Navy? What are the systems that exist to insure the proper administration and utilization of modification funds? Why is the management of modification funds different from other funds appropriated to the USN? Who is responsible for the management of modification funds and how are modification fund requirements determined? What can be done to strengthen the management of modification funds? These are the general problem areas this thesis will address.

C. PURPOSE AND OBJECTIVE

The purpose of this thesis is to analytically review the processes that comprise the modification information system, in an attempt to see if any improvements can be made. The main objective is to provide recommendations for better management control over the limited modification funds assigned to various aviation programs. To do this, the problems associated with the administration of modification funds will be analyzed by contrasting the flow of documentation and funds as a function of USN policy with actual practices. A secondary objective is to provide a guide for the personnel tasked to administer modification funds, so that additional direction can be provided and better control gained over the modification funds assigned to approved projects. The author's premise is that increased emphasis on the management of funds should lead to improved timeliness of modifications, adequate support of the modified weapon system, and better visibility and feedback on the usage of assigned funds. The scope of these objectives will be limited primarily to the Aircraft Procurement, Navy (APN) funds administered by the Aviation Supply Office (ASO) in conjunction with their efforts as an implementing activity for NAVAIR.

D. RESEARCH APPROACH AND METHODOLOGY

The research is directed at the Navy's out-of-production aircraft, which receive in-service modifications at the Naval Air Rework Facilities (NARF). However, problems encountered on these type aircraft can be basically the same as those in production and those that receive rework at commercial contractors.

The research is divided into four main areas:

1. Literature search,
2. Data collection, including review of actual modification programs, planning documents, and progress reports,
3. Interviews with cognizant personnel at various weapon systems management activities, and
4. Correlation of the data obtained into a format that presents the problems encountered in the modification process and analysis of the problems so that management can correct the deficiencies.

This research is supplemented by the author's personal experience on two aircraft programs; one, an in-production system managed by a Program Manager (PM) at NAVAIR, and the other, an out-of-production aircraft field, managed by a Weapon Systems Manager (WSM) at a NARF. It is the author's opinion that the problems encountered by these two different management organizations, in the area of modification management, are similar and can be used together to make generalized recommendations for improvement. The intent is to piece together the various portions of the modification process, covering the managing organization personnel, the formulation and implementation of modification programs, the funding situation and problems, and then to develop guidelines along which improvements can be made to the process.

E. THESIS ORGANIZATION

The first chapter of the thesis briefly introduces the reader to the concept of modification management and why it is necessary that control of the funds associated with it must be attained, the author's objectives and limited scope, research approach and methodology.

Chapter II discusses the background of modification management with specific emphasis on Configuration Management (CM) and the Integrated Logistics Support (ILS) interface.

Chapter III discusses the driving forces behind the modification program with a detailed view of the Operational Safety Improvement Program (OSIP) and the Engineering Change Proposal (ECP) process in conjunction with the flow of funds in the modification effort.

Chapter IV is an analysis of the policy and procedures utilized by the ASO in the administration of modification funds as a function of the concepts presented in Chapters II and III. During this analysis, actual data from a current modification program underway in the USN will be used as a representative model.

In Chapter V the author summarizes the findings and makes recommendations for improvements to the modification management concept. Additionally, the author makes recommendations for areas where further analysis could be performed to possibly improve the modification management process.

II. MODIFICATION MANAGEMENT

A. INTRODUCTION

Chapter II will provide a discussion of the concepts necessary to promote effective modification management within the Program Manager (PM) and Weapon Systems Manager (WSM) organizations. The discussion will concentrate on the processes of Configuration Management (CM) and Integrated Logistic Support (ILS) interface necessary to document and accomplish the implementation of approved modifications to aviation weapon systems. The discussion of CM will highlight the important facets of gaining early-on control of the engineering ramifications in order to allow for adequate support from the ILS function. The information presented is an amalgamation of concepts discussed in various manuals, instructions, texts, and articles regarding the subject of modification management and the importance of CM and ILS to that process. The author's prior experience will be integrated into the presentation in an effort to provide further insight to the importance of the processes.

B. BACKGROUND

Modification, as defined by Webster's Dictionary, is:

> "... the making of a limited change in something; to make basic or fundamental changes in, often to give a new orientation to or to serve a new end; a change in something caused by external factors" [Ref. 6:733].

As noted in Chapter I, the current trend within the Department of Defense (DOD) is toward longer operating life cycles for weapon systems by increased use of the modification and modernization programs being

substituted for new procurement. This point was driven home by VADM McDonald when he stressed the fact that the average age of operational aircraft in the Navy inventory had risen from 8 years to 12 years during the time span from 1976 to 1980, even though the F-14 Tomcat was being procured in significant numbers to replace aging F-4 Phantom aircraft [Ref. 2]. This philosophical change has pushed the modification of weapon systems to the forefront of the United States Navy's (USN) PM's and WSM's attention, and has made the processes of CM and ILS a necessity for the continued operations of almost every weapon system in the USN inventory. Management of these changes or modifications is necessary to establish that considerations such as safety, operational, and reliability and maintainability programs are budgeted to ensure a ready and responsive fleet [Ref. 5:94].

Coupled with the extensive growth and use of modification and modernization programs has been a growth in the backlog of unincorporated changes, which has a detrimental impact on the limited resources assigned to the USN on various programs to complete approved modification programs [Ref. 7:iii]. In addition to the monetary cost, this backlog is costly in the terms of reduced operational capability while aircraft await the incorporation of modification changes. Reductions in capability result from:

1. A significant time lag between the identification of modification requirements and implementation of the modification action, which necessitates emergency procedures such as "Quick Mod" (an accelerated method of arriving at quick fixes) and hasty procurement of unproven modification kits. This is most detrimental to the orderly documentation of configuration status accounting and lends itself to fragmented logistic support [Ref. 7:i].

2. Downtime for systems while modifications are being performed, or worse, downtime while corrective action is being taken to correct new deficiencies caused by modifications [Ref. 1:3].

3. Large backlogs of required modifications which remain unfunded for extensive periods of time due to lack of budget priority [Ref. 7:i].

4. Difficulty in providing logistic support due to numerous configurations of assets during modification compliance, limited turnaround stocks of commodity end-items, and improperly identified assets resulting from breakdowns in configuration status accounting [Ref. 1:4].

To deal with these problems, an understanding of the organizational concepts and purposes of CM and the ILS interface is required.

C. CONFIGURATION MANAGEMENT (CM)

The function of CM has long been performed in the development and production of weapon systems as well as in the modification of these systems [Ref. 8:1]. Thus, CM is a process that encompasses a system throughout its entire life cycle, i.e., the time span as a system evolves from concept formulation to engineering development, then into production, and finally during the operational life. As a system evolves through its life cycle, its physical and functional characteristics also evolve. Modifications are continually proposed and implemented to achieve a variety of goals such as improved performance, to correct deficiencies in systems design, to reduce weight, improve reliability and maintainability, and to update the system to "state-of-the-art". The discipline of CM today has been developed to manage the evolution of these changes in a system during its life, so that accurate, up-to-date status of modifications can be obtained and to preclude the approval of unnecessary or marginal changes.

CM, as defined by the Naval Air Systems Command (NAVAIR) Configuration Management Manual, NAVAIR Instruction 4130.1A, dated 29 September, 1980, is:

"A discipline applying technical and administrative direction and surveillance to (1) identify and document the functional and physical characteristics of a configuration item, (2) control changes to those characteristics, and (3) record and report change processing and implementation status [Ref. 9:A-2].

In essence, this definition requires specific identification of the item, for which configuration management will be applied, to be placed on the contract, whether it is for procurement or modification, and further requires that any changes to the item must be with government concurrence before any change can be made. Additionally, any change or modification must be summarized to the government in writing assessing the total impact of the change, with particular regard as to the logistic support of the system. If the change is approved, it is the PM's/WSM's responsibility, as the government's representative, to account for the implementation of the change in all affected areas, i.e., the hardware, spare/repair parts, technical manuals, publications, trainers, etc. The purpose of CM, at the bottom line, is to insure the continuing logistics supportability of systems in the government inventory [Ref. 10:21]. Figure II-1 shows the major facets and interfaces associated with CM that the PM/WSM must understand and control in order to provide effective modification management.

The processes that allow the PM/WSM to implement CM concentrate on three basic areas: Configuration Identification (CI); Configuration Control (CC), and Configuration Status Accounting (CSA). These three areas will be briefly discussed in the following paragraphs.

1. <u>Configuration Identification (CI)</u>

CI includes the specifications and their associated diagrams, flowcharts, drawings, parts lists, etc., that are used to describe the functional and physical characteristics of the configuration item. The

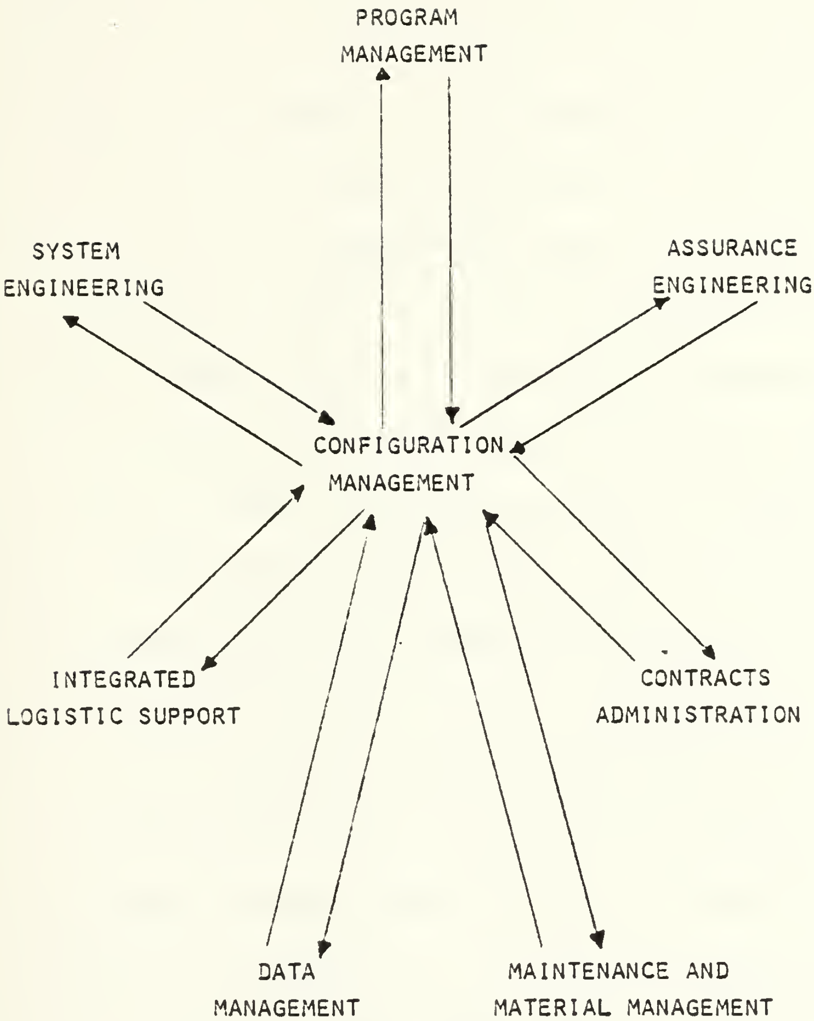


Figure II-1. Configuration Management Interface with Other Management Systems

process of controlling the CI requires the PM/WSM to establish baselines for various portions of the documentation at appropriate milestones in the program [Ref. 10:22]. Initially, the CI begins with the configuration item, which is an aggregation of hardware/computer programs or any of its dicrete portions which satisfies an end-use function and is designated by the government for CM. Any item required for logistic support and designated for separate procurement is a configuration item [Ref. 9:A-1]. The principal tool utilized in establishing the CI is the configuration audit (CA). The CA is used at predetermined points in the life cycle of the program to verify such items as design specifications, drawings and manuals against the physical item to insure their congruence [Ref. 11:22].

As defined above, CM is the concept of technical baseline management. The baseline serves as the starting point and departure point for any changes or modifications that are made. Recalling that the definition of CM is first concerned with the identification and documentation of the functional and physical characteristics of the configuration item, it becomes necessary to distinguish between a functional and physical baseline.

The functional baseline is the initially approved baseline and is defined by preliminary systems specifications. Essentially, it describes the required technical characteristics during the conceptual phase based on system performance and design requirements. During the validation phase, the system's specifications are expanded, and refined development specifications are prepared. These development specifications define the allocated baseline [Ref. 1:22].

The allocated baseline is used to document the functional requirements of each configuration item [Ref. 10:23]. It is defined by the development specifications and marks the beginning of the full-scale development phase during acquisition or modification. The allocated baseline is functional throughout the development phase and is the basis for the contractor's design of the configuration item.

The product baseline is established at the beginning of the production phase and is used to document the physical design that meets the requirements of the allocated baseline [Ref. 10:23]. It is defined by the configuration item product specifications based on the detailed design or "build to" requirements [Ref. 1:22]. Product baselines are established for each configuration item as it successfully completes qualification testing and design/control verification. Quality assurance testing is included in the product specification and must be successfully accomplished prior to government acceptance of the production item. Figures II-2 and II-3 represent the life cycle of major systems acquisition or modification, CM phasing and the flow of base-lines within the CM process of an item evolves through its life cycle.

2. Configuration Control (CC)

The second major area of CM, and in this author's opinion probably the most visible aspect of it, is configuration control. CC is primarily related to the second facet of the definition of CM; the control of changes to the characteristics as defined by the CI documentation. CC is the systematic evaluation, coordination, approval or disapproval and implementation of all approved changes in the configuration of a configuration item after formal establishment of its CI [Ref. 7:A-1]. In practice, it is the process that guarantees the underlying reliability and

LIFE CYCLE OF MAJOR SYSTEMS ACQUISITION

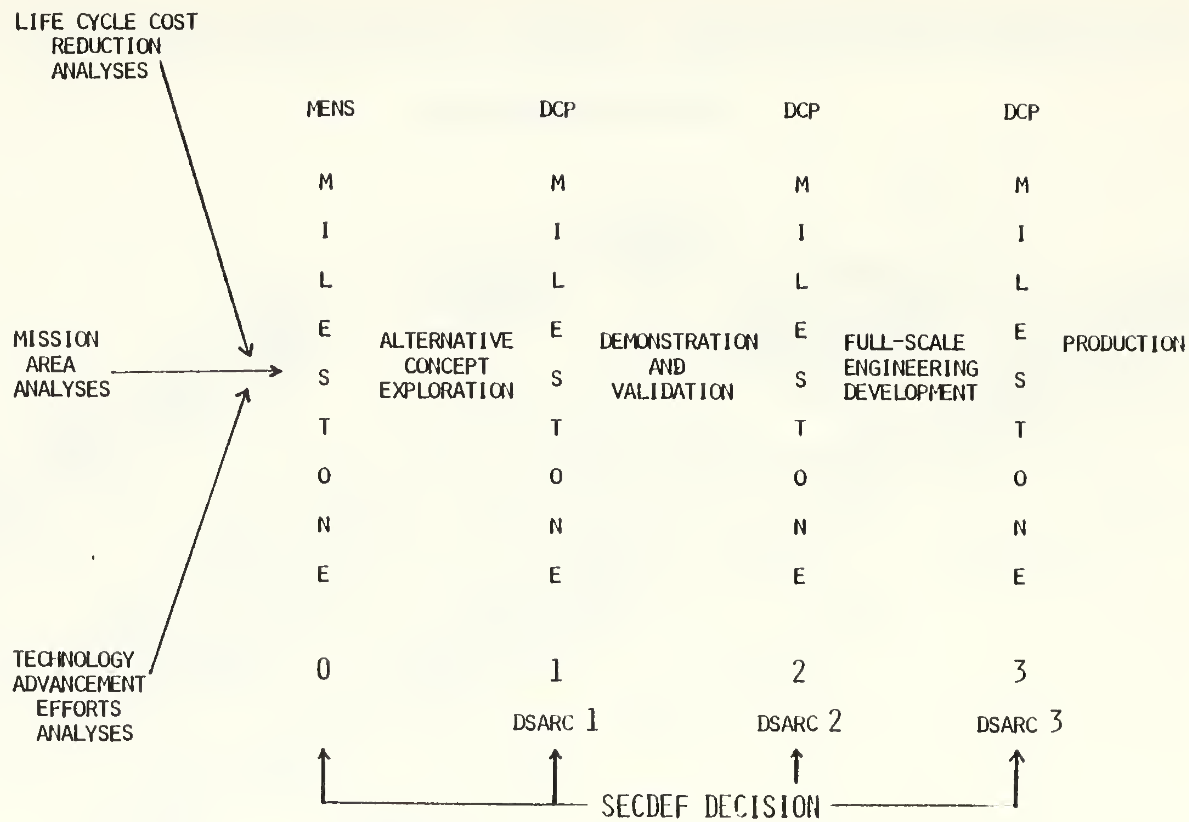


Figure II-2. Life Cycle of Major Systems Acquisition

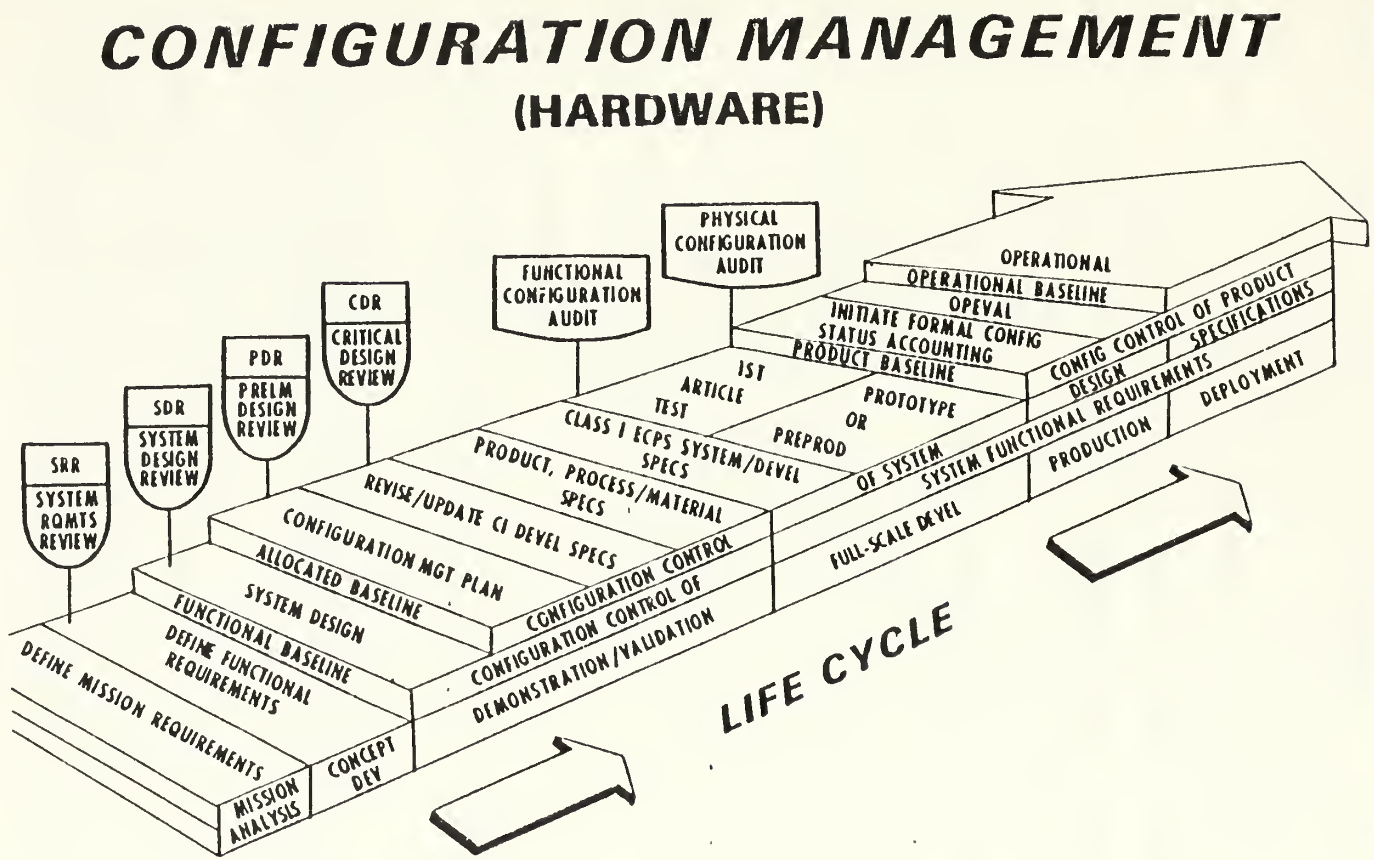


Figure II-3. Configuration Management Baseline Phasing

maintainability of the configuration item during the operational portion of the life cycle of the item. This area is of prime importance to the PM/WSM in the modification management process.

Program/Weapon System management is often referred to, by those who are tasked to support a system, as the management of changes, which it certainly is in the most global definition. However, all too often this broad interpretation of management of change has not properly included change management. In this more limited context, change management is one of the major functions of modification management and refers to the control of engineering changes, or ECPs as they are commonly known [Ref. 12:1]. CC involves the use of ECPs and requests for deviations and waivers of technical requirements. Its objective is to insure the smooth functioning of the ECP preparation, evaluation, approval, and implementation [Ref. 13:11], and to preclude marginal or insignificant modifications [Ref. 1:47]. Specifically, the change criteria are defined as those necessary or beneficial changes required to:

a. Correct deficiencies,

b. Satisfy changes in operational or logistic support requirements,

c. Effect substantial life cycle cost savings, or

d. Prevent or allow desired slippages in an approved modification schedule [Ref. 14:3-1].

The process by which ECPs are established and approved will be discussed in Chapter III in conjunction with the Operational Safety Improvement Program (OSIP) and the funds flow for the modification process.

3. Configuration Status Accounting (CSA)

CSA is the third major area of concern in CM. It is the recording and reporting of the information that is needed to manage the configuration effectively, including a listing of the approved CI, the status of proposed changes to the configuration, and the implementation status of approved changes [Ref. 15:18]. The objective of CSA is to provide the user with accurate up-to-date information on the configuration status of all configuration items [Ref. 11:21]. The CSA technique establishes a record system which enables the user to determine the following information:

a. Where an item is located or installed,

b. The identification of selected items by serial number or bureau number in the case of aircraft, or

c. The current modification status [Ref. 13:13].

The Navy CSA system consists of four subsystems to accommodate its diverse inventory of weapon systems. This subsystem approach allows the entire inventory subject to CM to be included in an economical manner that will furnish the depth of data required [Ref. 1:77], so that the PM/WSM can accurately gauge the status of change/modification implementation. The four subsystems are Advanced, Standard, Installed, and Bulk. The Advanced subsystem accounts for the configuration status of selected components and support equipment by serial number and location. The Standard subsystem records the applicability and whether a change has or has not been incorporated by specific unit serial number or bureau number. The Installed Systems subsystem is a method by which the status of selected systems within a weapon can be determined. The Bulk Accounting

subsystem provides a summary of CSA for the majority of inventory components that do not require accounting under the other three subsystems [Ref. 1:78-83].

The continuous processing aspect of the CSA system allows the PM/WSM to know at what point the system status is in regard to proposed, approved, and implemented changes/modifications. While CSA is often perceived by the PM/WSM personnel as a group of very expensive and voluminous reports used to track the implementation status of approved changes, in actuality it is a management process vital to the assessment of modification management programs, and the reports are the means by which the PM/WSM insures that the process is accomplished and properly documented.

D. INTEGRATED LOGISTIC SUPPORT (ILS) INTERFACE

As stated previously, the control of changes to an item or system is necessary to insure that the system meets its specified performance and technical parameters. The rigorous review of ECPs within the USN insures that all proposed changes are given a thorough review and are considered for implementation. It also provides for the involvement of all functional areas affected by the change proposal to review the impact of the change and to provide input data to support approval or disapproval as depicted by Figure II-1. Additionally, CM provides the PM/WSM with a method by which the status of implementation for approved changes and other adjustments to the various baselines can be tracked. The purpose of this is that for the PM/WSM to have control, he or she must establish CM processes from the very beginning of the project, whether it is an acquisition or modification program. To gain this control, the PM/WSM must establish an adequate base in the ILS. As stated in the Naval Material

Command (NAVMAT) Instruction 4000.2B, dated 27 June 1975, dealing with Integrated Logistic Support Policy and Planning, the interface between CM and ILS is essential. In part it says:

> "... configuration management requires comprehensive control procedures to be exercised over configuration throughout a system's life cycle. It should be apparent that hardware configuration changes create needs (and costs) for changes in logistic support. Therefore, it is important that configuration control procedures include provisions for integrated support planning [Ref. 16:37].

The ILS personnel, in concert with the CM personnel, must tailor the requirements for modification management to be consistent with the size, scope, stage of life cycle, nature, and complexity of the system [Ref. 15:10].

ILS, as defined by NAVMAT Instruction 4000.2B, is:

> "... a process which identifies, in a systematic and orderly manner, the functions which must be performed in support of operation and maintenance and the resources needed to accomplish those functions. The process also requires that hardware and system design be reviewed with a view toward establishing the hardware design and configuration which reduces, to the maximum practicable extent, the logistic support burden placed on the operating forces [Ref. 16:2].

NAVAIR Instruction 4130.1A is more explicit in its definition of the ILS concept. In its definition of the concept of the interface between ILS and CM, it defines the ILS requirement as:

> "... a composite of the elements necessary to assure the effective and economical support of a system or equipment at all levels of maintenance for its programmed life cycle. The elements include all resources necessary to maintain and operate an equipment or weapons system, and are categorized as follows: (1) planned maintenance; (2) logistic support personnel; (3) technical logistic data and information; (4) support and equipment, (5) spares and repair parts; (6) facilities, and (7) contract maintenance [Ref. 9:A-5].

The thrust of both of these definitions is the same. ILS is the process of having the right thing in the right amount to the right place at the right time.

To enhance the probability of accomplishment in a large modification program or new system acquisition, both the ILS and CM personnel should remain cognizant of the functional and physical baselines from the very start. By so doing, the status and ramifications associated with changes can be monitored and schedules and resources shifted to emerging requirements. In this author's opinion, failure to identify the baseline configuration and to control/monitor the changes to that baseline are an open invitation for the loss of control in the areas of cost, schedule, and performance.

ILS and CM are the cores for insuring that the configuration of an equipment or weapon system is derived during development, determined during design, established during production, and maintained during the operational life [Ref. 13:3]. It is the art of organizing and controlling, planning, design development, and hardware operations by means of uniform configuration control, and identification and status accounting of the product [Ref. 13:7]. The PM/WSM, by incorporating effective ILS and CM procedures, can insure that he or she is able to define and verify the configuration items and logistics support elements that are to be procured, control the changes to the characteristics, monitor the implementation of changes, and track the configuration of all units in the inventory under his or her cognizance [Ref. 10:28]. The author contends that by so doing, the PM/WSM will vastly improve the chances of bringing the project to fruition at the desired cost, schedule, and level of performance.

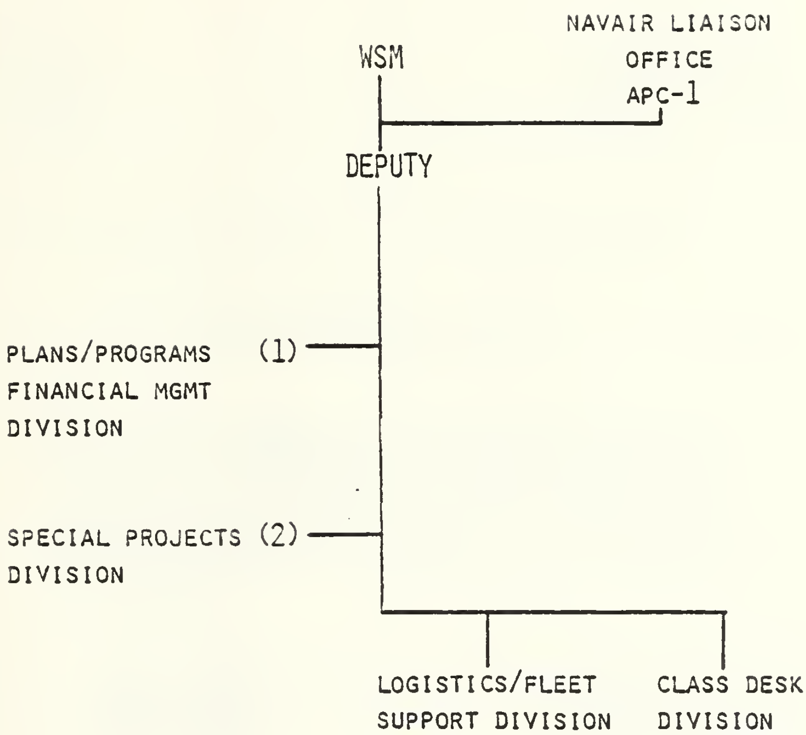
The organizational structure that is used to support the PM/WSM in the areas of ILS and CM are basically the same for both in-production and out-of-production aircraft. Figure II-4 is a representative model of the organization of a typical WSM office located at a Naval Air Rework Facility (NARF). Figure II-5 is a further breakdown of this structure, showing the special responsibilities of the Class Desk division, which includes CM, and the Logistics/Fleet Support division, which includes the function of ILS.

Like the PM/WSM, the ILS and CM managers operate within a huge matrix of organizations. The following traits, therefore, are essential for the personnel assigned to these positions:

1. Have an in-depth knowledge of the Navy logistics systems, i.e., supply, maintenance, training, ground support, and publications,
2. Be an effective organizer,
3. Be able to communicate with other people and inspire their dedication to hard work,
4. Be confident, for the job will require interaction with people at all levels of the government and contractors,
5. Have analytical ability and be at ease with work that involves much detail, and
6. Be patient and poised, but aggressive and innovative when required [Ref. 17:31].

Figures II-6, II-7, and II-8 give a detailed overview of the requirements of the WSM organization. Figure II-9 is a representative example of the interfaces that the PM/WSM, ILS and CM personnel must deal with on a continual basis for an effective modification management effort. This author feels strongly that the interface of the ILS and CM personnel is important to the success or failure of a modification program.

BASIC WSM ORGANIZATION



NOTE: (1) WHEN ASSIGNED SYSTEM IS STILL IN PRODUCTION OR CHANGE ACTIVITY EXCEEDS FIVE MILLION DOLLARS

(2) WHEN IN THE AREAS OF EW AND WEAPONS DELIVERY AIRCRAFT MODIFICATION REQUIRES EXTRAORDINARY MANAGEMENT/COORDINATION

Figure II-4. Basic Weapon System Management Organization

WEAPON SYSTEM MANAGEMENT

WSM
CLASS DESK
DIVISION

WSM
LOGISTIC/FLEET
SUPPORT DIVISION

EXISTING CFA ORGANIZATION

WSM SUPPORT ORGANIZATION ESTABLISHED SHOULD BE STAFFED AND DEDICATED (TO PRECLUDE CONFLICT OF PRIORITIES) TO SUPPORT THE TOTAL WEAPON SYSTEM ASSIGNED UNDER THE WSM CONCEPT IN THE FOLLOWING DISCIPLINES:

<u>ENGINEERING</u>

- STRUCTURES
- AVIONICS
- SYSTEMS INTEGRATION
- COMMON SYSTEMS
- POWER PLANTS
- CONFIGURATION MANAGEMENT

<u>LOGISTICS</u>

- SUPPORT EQUIPMENT
- PUBLICATIONS
- TRAINING/TRAINERS
- SUPPLY SUPPORT
- INTEGRATED LOGISTIC SUPPORT

Figure II-5. Weapon System Management

WEAPON SYSTEM MANAGEMENT

DEFINITION:

- A COMPILATION OF PROJECT MANAGEMENT FUNCTIONS PERFORMED AT A FIELD ACTIVITY AFTER A WEAPON SYSTEM HAS TRANSITIONED FROM MANAGEMENT IN A PROJECT MANAGEMENT OFFICE TO A CONTINUATION OF LIFE CYCLE MANAGEMENT IN A WEAPON SYSTEM MANAGEMENT OFFICE.

- RESPONSIBLE FOR TOTAL WEAPON SYSTEM
  - PLANNING
  - BUDGETING
  - MANAGEMENT
  - INTEGRATION OF ENGINEERING
  - MATERIAL ACQUISITION
  - LOGISTIC SUPPORT
  - CONFIGURATION MANAGEMENT

Figure II-6. Weapon System Management Definition

WEAPON SYSTEM MANAGEMENT

POLICY AND PROCEDURES:

- RESPONSIBILITY ASSIGNED ON A TIME-PHASED BASIS
- FINAL TRANSITION AFTER INITIAL DECISION THAT SYSTEM NO LONGER REQUIRES HEADQUARTERS LEVEL MANAGEMENT
- OVERALL TECHNICAL AND MANAGEMENT FUNCTIONS THAT REMAIN WITHIN NAVAIR:
  - PLANNING
  - PROGRAMMING
  - BUDGETING
  - DEPOT AIRCRAFT REWORK CONTROL
  - MANAGEMENT OF MULTIPLE/COMMON EQUIPMENT AND SUPPORT PROGRAMS

THE COMMANDER, NAVAL AIR SYSTEMS COMMAND RETAINS BASIC RESPONSIBILITY FOR THE SYSTEM, EVEN THOUGH IT HAS BEEN TRANSITIONED TO A FIELD ACTIVITY FOR MANAGEMENT DURING THE REMAINDER OF ITS LIFE CYCLE.

Figure II-7. Weapon System Management Policy and Procedure

WEAPON SYSTEM MANAGEMENT

RESPONSIBILITY/ACCOUNTABILITY:

- THE WSM IS THE PRIMARY EXECUTIVE RESPONSIBLE AND ACCOUNTABLE TO THE NAVAL AIR SYSTEMS COMMAND FOR OVERALL MANAGEMENT OF THE ASSIGNED WEAPON SYSTEM.

- THE WSM WILL HAVE MANAGEMENT RESPONSIBILITIES FOR THE PLANNING AND EXECUTION OF:

  - TOTAL SYSTEM INTEGRATION
  - DESIGN AND ENGINEERING
  - MODIFICATION
  - MAINTENANCE AND REWORK
  - TEST AND EVALUATION
  - CONFIGURATION MANAGEMENT
  - PRODUCTION SUPPORT
  - MATERIAL MANAGMENT
  - CONTRACTING
  - FLEET LOGISTICS SUPPORT

Figure II-8. Weapon System Management Responsibility/Accountability

WEAPON SYSTEM MANAGEMENT

INTERFACE RELATIONSHIP:

- NAVAL AIR SYSTEMS COMMAND
- NAVAL MATERIAL COMMAND
- OFFICE OF THE SECRETARY OF THE NAVY
- OFFICE OF THE CHIEF OF NAVAL OPERATIONS
- OFFICE OF THE COMMANDANT OF THE MARINE CORPS
- OTHER PROJECT MANGERS
- OFFICE OF THE SECRETARY OF DEFENSE
- CONGRESS
- GENERAL ACCOUNTING OFFICE
- NAVAL SUPPLY SYSTEMS COMMAND
- INVENTORY CONTROL POINTS
- NAVAL AIR TECHNICAL SERVICES FACILITY
- COGNIZANT FIELD ACTIVITY
- NAVAIR TEST AND EVALUATION ACTIVITIES
- NAVAL AIR ENGINEERING CENTER
- TYPE COMMANDERS
- AIRCRAFT CONTROLLING CUSTODIANS
- NAVAL AIR REWORK FACILITIES
- AIR FORCE
- ARMY
- NAVAL TRAINING AND EQUIPMENT CENTER
- NAVAL AIR MAINTENANCE TRAINING GROUP
- NAVAL AVIATION LOGISTICS CENTER
- NAVY INTERNATIONAL LOGISTICS COORDINATIING OFFICE

Figure II-9. Weapon System Management Interface Relationship

E. SUMMARY

In this chapter, an overview of the configuration management and Integrated logistic support requirements necessary to effect a modification program were presented. The importance of gaining early control of a modification program through the conscious effort at configuration management was stressed. In addition, the importance of the documentation was presented as a part of the process.

The initial requirement is to establish the CI, so that adequate baseline information about the program can be determined and tracked as the modification effort moves forward. The CA is utilized in this process to verify that the CI is in accordance with the specifications and parameters designated for the modification plan.

CC is the process that ties the project together through the systematic evaluation of changes to the CI and determination of the necessity of changes to the CI. CC is the direct link to the processes that will be discussed in the next chapter.

CSA is the process by which the USN, as well as the other services, determine the current status of the modification process. The necessity to understand the status for all modifications in process is a principle concern to the PM/WSM organizations, and CSA is the process that can develop the required information.

The ILS information within the PM/WSM organizations allows for the melding of the engineering concepts developed by the configuration management personnel with the support parameters developed by the logistics personnel. The interface of these two disciplines is essential to the effective and efficient completion of modification program, in the author's opinion.

The next chapter will deal with the driving force behind the scene: the Operational Safety Improvement Program (OSIP), Engineering Change Proposal (ECP) processes and the flow of funds into the various commands tasked to provide support in the modification management arena.

III. OPERATIONAL SAFETY IMPROVEMENT PROGRAM, ENGINEERING CHANGE PROPOSALS AND THE FLOW OF FUNDS IN THE MODIFICATION PROCESS

A. INTRODUCTION

This chapter will provide a discussion of the requirements necessary to initiate a modification program and the related flow of funds from the process. The manner by which modifications are proposed, approved, and implemented starts with the Operational Safety Improvement Program (OSIP), which generally equates to the concept formulation stage in the acquisition process. The process then moves to the Engineering Change Proposal (ECP) procedure, which incorporates initial design, demonstration and validation and, ultimately the approval for service use and production installation.

The necessity for these programs was borne out by the Chief of Naval Operations (CNO) ADM Hayward, during testimony to the House of Representatives on the 1980 budget in which he said:

> "... Since 1974, the major way the aircraft side of the house has been able to keep up with the requirement is through extending the life of the airplanes. You have seen our CILOP, conversion in lieu of procurement programs, which have allowed us to keep operating attack and fighter airplanes well beyond life spans that we had been accustomed to in the '50s and '60s. We are now flying airplanes that are 15 to 20 years old in a very aggressive air-to-air and air-to-ground role. That has been one of the major ways in which we have attempted to avoid new procurement costs [Ref. 4:141].

During this cycle, the Configuration Management (CM) and Integrated Logistic Support (ILS) personnel must operate in conjunction to insure that the engineering and logistics disciplines interface and integrate the modification process into a useable viable product. Additionally, as the

OSIP/ECP process moves forward, funds are appropriated and expended to support the emerging product. These funds must be properly monitored, tracked, and accounted for in order to insure that they are spent in the most cost/beneficial manner to both the CM and ILS personnel.

This chapter will highlight the important facets of the OSIP procedures, ECP processing requirements, and funds flow in order to allow the reader to gain an understanding of the time, depth, and effort required to prepare, justify, approve, and implement a modification program. Examples from the A-3 Skywarrior and F-4 Phantom Weapon System Management (WSM) offices will be used to provide actual scenarios of the process. The information presented is a combination of the concepts discussed in various instructions, notices, and manuals regarding the modification processing problem.

B. OPERATIONAL SAFETY IMPROVEMENT PROGRAM (OSIP)

The OSIP process is the first step necessary to incorporate a modification in an equipment or system. The function of putting together an OSIP requirement and actually processing the requirement to approval can be a long drawn-out procedure, lasting in excess of two years from the initial input until actual approval to execute the OSIP plan is received.

The origin of the OSIP procedure starts at the Naval Air Systems Command (NAVAIR) with the issuance of NAVAIR Notice 4000; The Operational and Safety Improvement Program, Items for the Aircraft Modification Budget for Fiscal Year 19XX; and submission of (Report Symbol NAVAIR 4000-10). This notice requires the various PM/WSM organizations to submit modification requirements for inclusion in the budget for the fiscal year 19XX plus 2. The purpose of this early identification and submission is to

afford an adequate amount of time for the review of the proposals and to facilitate submission of approved proposals into the Department of Defense (DOD) Programming, Planning, and Budgeting System (PPBS). Appendix A is a copy of the cover letter from the NAVAIR Notice 4000 OSIP submission request for fiscal year 1983.

In order to understand the features of the request, a background in the organizational and financial parameters required for submission is necessary. The following sections will provide a brief overview of the key players in the OSIP process and the financial areas involved.

1. Organizational Authority

Guidance in the preparation of OSIP submissions is received from several levels within the hierarchy of the United States Navy (USN). Starting with the CNO, authority is delegated down to the Deputy Chief of Naval Operations, Air Warfare (DCNO), Code OP-05, who is the CNO's representative for matters concerning aviation programs. Under the DCNO OP-05, there are five divisions. The Aviation Plans and Requirements Division, Code OP-50, is the focal point of the flow of OSIPs within CNO's office. Within OP-50, the three branches: Program and Budget, OP-501; Aircraft/Weapons Requirements, OP-506, and Aviation Plans, OP-508, are the primary sources for OSIP review and approval. Appendix B is a detailed list of the functions of OP-50 and the interaction of the functions of the various branches. Figures III-1 and III-2 are graphic representations of the Office of the CNO and the DCNO for Air Warfare.

Additional direction and guidance at the third echelon level of NAVAIR is received from the Chief of Naval Material (CNM). Since NAVAIR is designated a systems command, it functionally reports to the Naval Material Command (NAVMAT). Figure III-3 illustrates the organizational structure of NAVMAT.

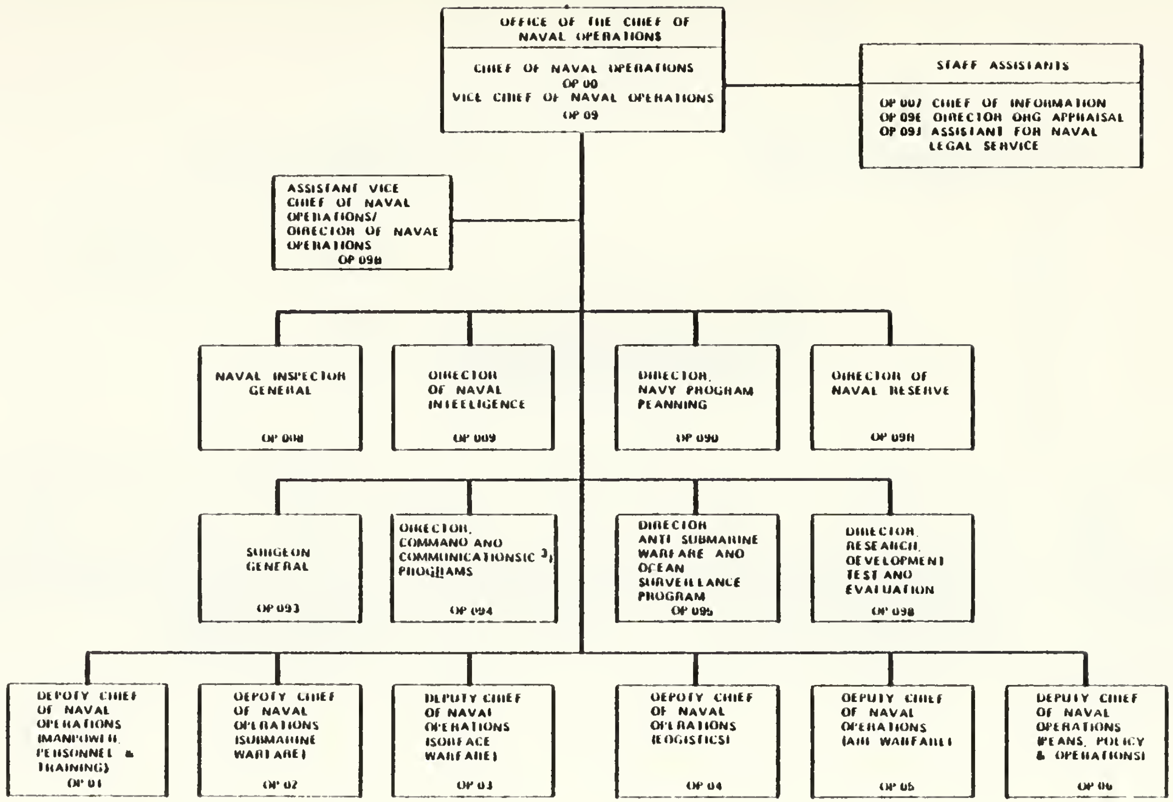


Figure III-1. The Organization Chart of the Office of the Chief of Naval Operations

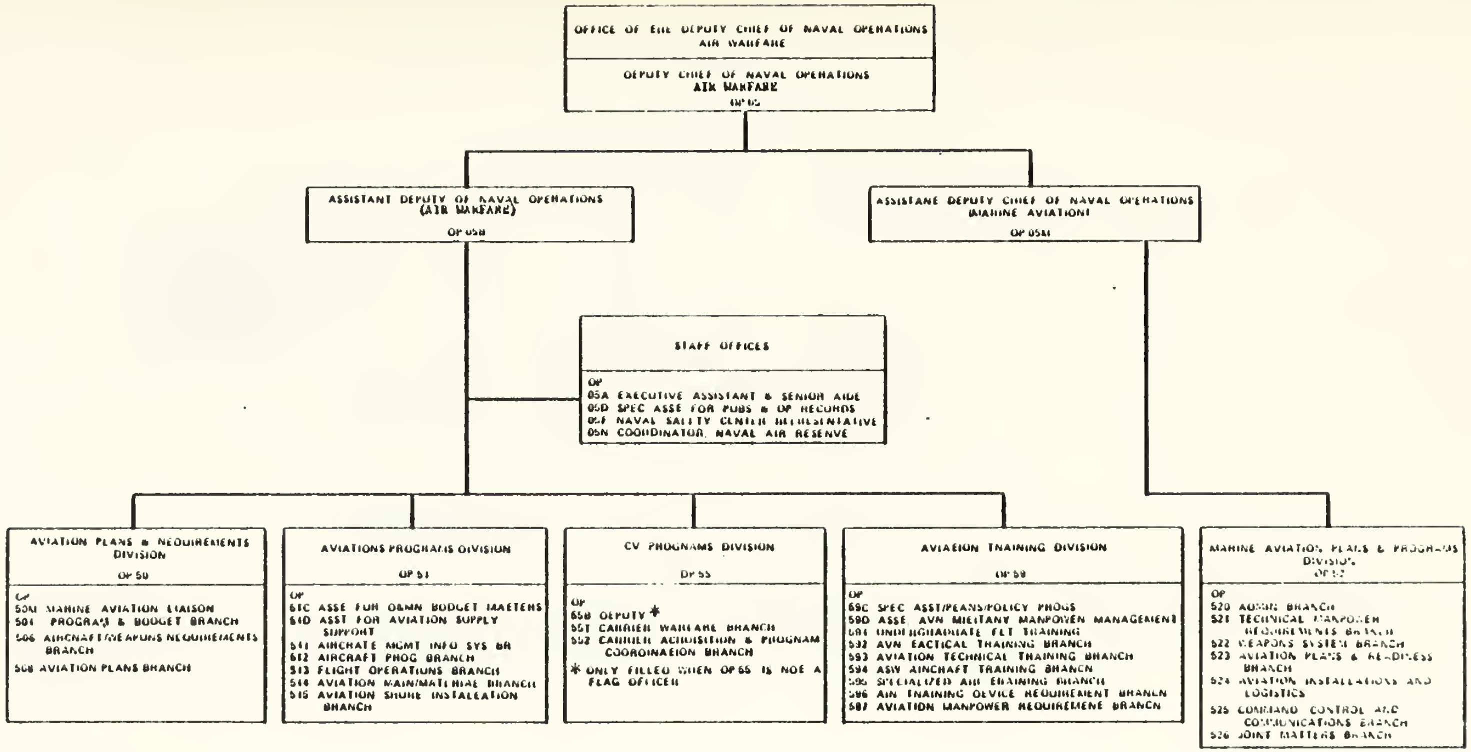


Figure III-2. The Structure of the Office of the Deputy Chief of Naval Operations (Air Warfare)

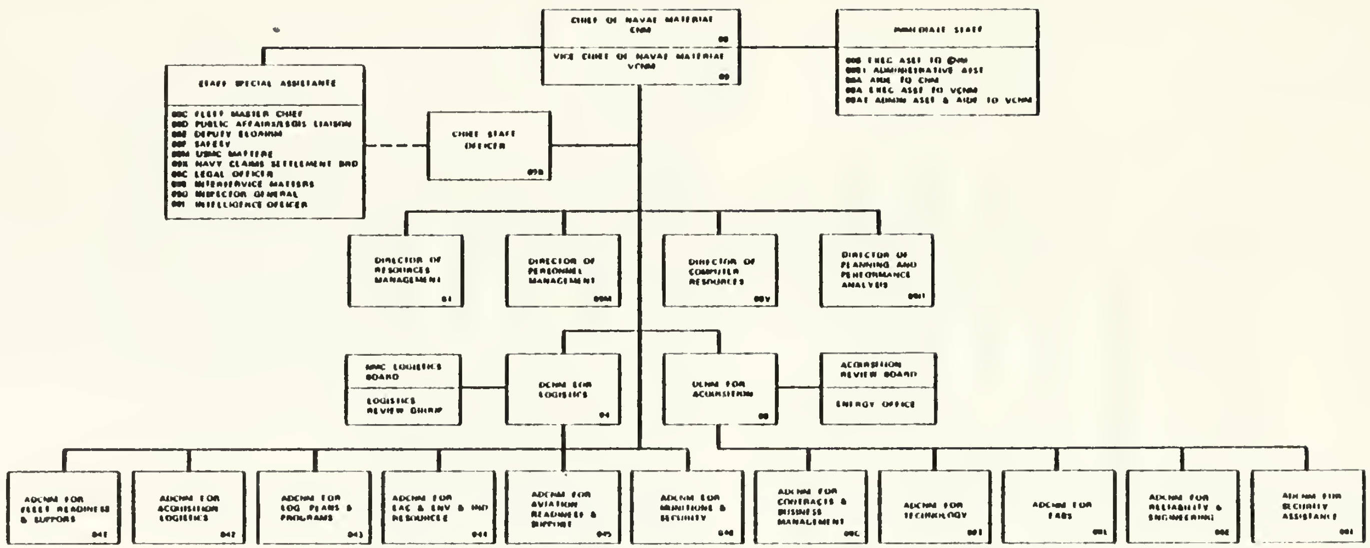


Figure III-3. The Organization Chart of the Headquarters Naval Material Command

Figure III-4 is the organization chart for NAVAIR showing the program and weapon system management interfaces with the higher levels within the command. The chart indicates that while NAVAIR is designated the overall responsibility for aviation weapon systems, it is still subordinate to, and must be responsive to, the direction and guidance provided by higher level authority.

Within NAVAIR, guidance for the preparation and submission requirements for OSIPs is managed under the cognizance of the Plans and Programs Division, Air-01. Further delegation of this authority is then provided to Air-102 under the auspices of Air-01. As can be seen from Appendix A, Air-102 is the originator within the NAVAIR community of the requirement to submit OSIPs. Additional guidance is contained in the notice from Air-08, Comptroller, on the delineation of funds and uses of funds.

2. Types of Funds

Aviation Procurement, Navy (APN), funds are the procurement account from which funds are authorized to perform the modification programs. Additionally, Operations and Maintenance, Navy (O&M,N) funds are utilized in the process for actual installation of the modifications. The breakdown of the various segments of the APN appropriations is as follows:

APN-1 Combat Aircraft Procurement

APN-2 Airlift Aircraft Procurement

APN-3 Trainer Aircraft Procurement

APN-4 Other Aircraft Procurement

APN-5 Modification of Aircraft

APN-6 Aircraft Spares and Parts

APN-7 Aircraft Support Equipment and Facilities

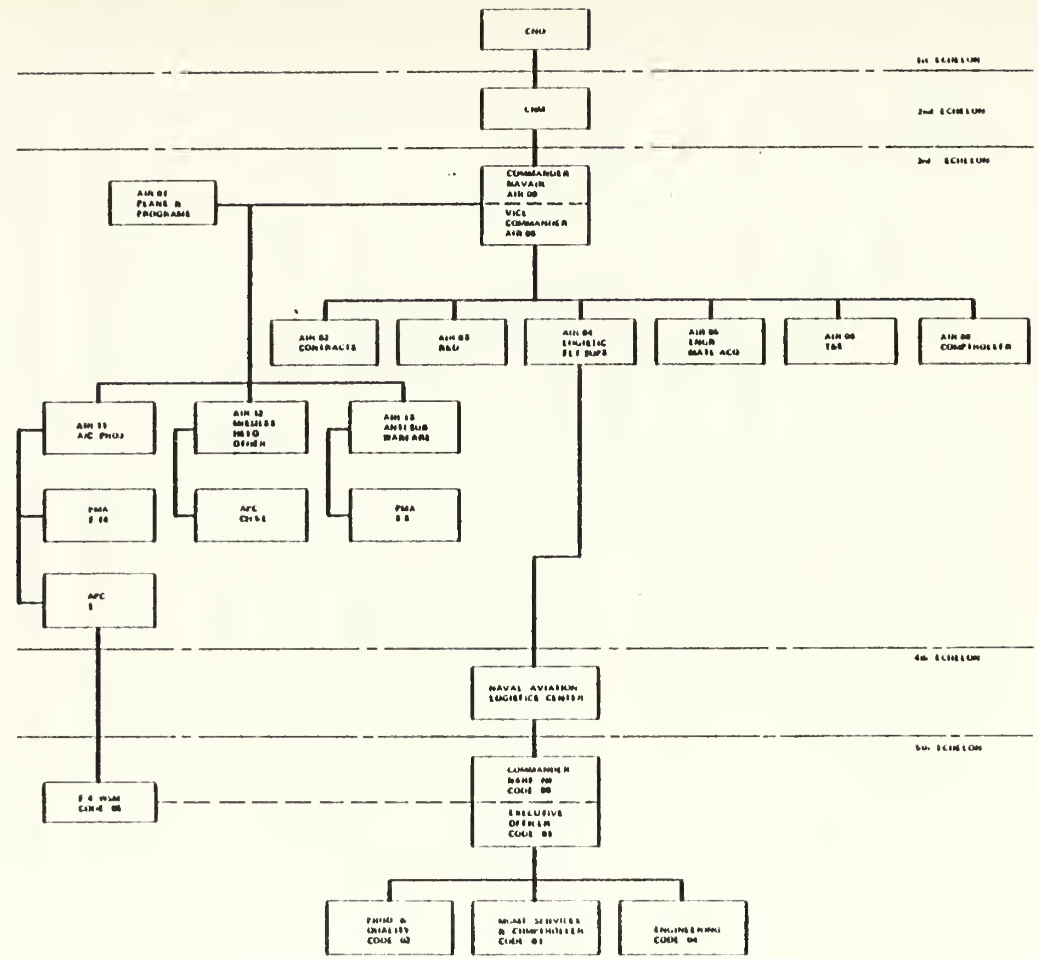


Figure III-4. The Organization Chart Showing the Naval Air Systems Command Program Management Interrelationships

Figure III-5 lists the major uses of APN funds in the modification of Naval Aircraft. Table III-1 is the presentation to the House of Representatives on the 1980 Budget for the APN appropriation. As can be seen from this table, $1.8 billion, or approximately 38 percent of the APN budget, is for modification, spares, and support. 17.5 percent is for modification alone, and while this represents a drop from the 22.5 percent in 1979, it should be remembered from VADM McDonalds' seminar and testimony by the CNO that fewer aircraft are available for modification as the years pass.

As stated in Chapter I, this thesis will focus on the area of APN-6 funds. The purpose for this is that the PM/WSM offices that the author has been associated with and the interviews conducted by the author, all stated that this was the most difficult area in which to gain control over the funds assigned to the modification program.

3. OSIP Submission and Processing

The procedure that initiates the process is the issuance of NAVAIR Notice 4000. This is referred to as the OSIP Call. The notice requests the various PM/WSM organizations to nominate OSIP requirements to NAVAIR, so that they can be reviewed and either approved or disapproved and then included in the budget cycle. Upon receipt of the notice, the PM/WSM offices submit, within a one month time frame, what basically amounts to a shopping list for new programs, to Air-102, the NAVAIR agent tasked with administering the OSIP process. The term "shopping list" is applicable here. In an interview with the F-4 WSM staff, they stated that the submission of 30 OSIP items in one fiscal year was not unusual. They hoped to get at least two or three approved. Those that were disapproved would be reviewed and probably resubmitted in the next year [Ref. 18].

AIRCRAFT PROCUREMENT NAVY
FUNDS
AND USES

APN-1 THROUGH APN-4	-- UTILIZED FOR IN PRODUCTION AIRCRAFT
APN-5	-- MODIFICATIONS TO IN SERVICE AIRCRAFT -- UTILIZED TO PAY FOR NON-RECURRING COSTS ASSOCIATED WITH MODIFICATION -- KIT COSTS -- GOVERNMENT FURNISHED EQUIPMENT -- GROUND SUPPORT EQUIPMENT -- MANUALS -- TRAINING AND CHANGES REQUIRED TO TRAINING DEVICES -- CONTRACTOR INSTALLATION OF CHANGES
APN-6	-- SPARES AND REPAIR PARTS, INCLUDING THOSE REQUIRED FOR THE MODIFICATION PROCESS -- INTERIM SUPPORT
APN-7	-- AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES

Figure III-5. Funds Utilized in the Modification Process

TABLE III-1. AIRCRAFT PROCUREMENT, NAVY (APN) BUDGET SUBMISSION FOR FISCAL YEAR 1980

AIRCRAFT PROCUREMENT, NAVY (APN)
($ In Millions)

	Qty	FY 1979	Qty	FY 1980	Qty	FY 1981
Total	131	$4358.7	103	$3967.9	113	$4714.1
Item						
Combat Aircraft (APN-1)						
A-6E (Intruder)	12	166.3	-	56.7	-	36.7
EA-6B (Prowler)	6	150.1	6	154.1	6	158.8
A-7E (Corsair II)	12	110.4	-	15.0	-	-
F-14A (Tomcat)	36	683.8	24	464.7	24	524.2
F/A-18 (Hornet)	9	429.5	15	574.6	48	1068.2
CH-53E (Super Stallion)	14	168.1	15	156.5	14	145.3
P-3C (Orion)	12	274.8	12	259.6	12	276.6
E-2C (Hawkeye)	6	181.1	6	173.5	6	171.1
ADVANCE PROCUREMENT	-	275.4	-	295.4	-	378.1
Airlift Aircraft (APN-2)						
UC-12B (CTX)	22	27.4	22	26.3	-	.5
C-9B (Skytrain)	1	12.8	-	-	-	-
ADVANCE PROCUREMENT	-	-	-	-	-	35.7
Trainer Aircraft (APN-3)						
T-34C (Mentor)	-	.3	-	2.0	-	-
T-44A	-	.8	-	.6	-	-
Other Aircraft (APN-4)						
EC-130Q	1	31.7	3	96.1	3	76.9
Modification of Aircraft (APN-5)	-	982.8	-	781.4	-	821.6
Aircraft Spares and Parts (APN-6)	-	569.2	-	656.6	-	738.9
Aircraft Support Equipment and Facilities (APN-7)	-	294.2	-	254.8	-	281.5

The submissions from the PM/WSM offices are coordinated with the Ground Support Equipment (GSE) personnel at NAVAIR and with the Naval Aviation Logistics Center (NALC) for inclusion of data pertinent to depot installations. However, no attempt is made to interface with the Air-04 Logistics and Fleet Support, or Air-05, Engineering Personnel, at this point in the process. Figures III-6 and III-7 provide an overview of the guidance contained in the notice as to how the programs will be organized and what funds are used to effect the modification.

After receiving all the input in response to the OSIP Call, Air-102 reviews the submissions for proper format and composition and forwards them to the office of the CNO. Within CNO's office, OP-506 is the responsible agent for reviewing the OSIP submissions.

OP-506 is the first place in the process where programs are subjected to disapproval. During the time frame from November 1980 to May 1981, the CNO internal review function is performed. It may or may not be interactive with the PM/WSM organizations, i.e., programs may be given a go/no go designation with no recourse from the PM/WSM or they may be tentatively rejected with allowance for reclama. In any event, those that survive are required to be updated. The final output from this review procedure is the input to the CNO Program Analysis Memorandum (CPAM). The CPAM's are developed to present to the CNO Executive Board (CEB) an overview of the approved Five Year Program. Subsequent to CEB review and decision, the CPAM's form the basis for the Navy Program Objectives Memorandum (POM).

During the time period June 1981 through August 1981, the Office of the Comptroller of the Navy (NAVCMPT) conducts the review of the POM, which includes the approved OSIPs fom the CNO review. During the NAVCOMPT

NAVAIR NOTICE 4000
GUIDANCE

FROM THE OFFICE OF THE DEPUTY CHIEF OF NAVAL OPERATIONS, AIRWARFARE (OP-50):

- COSTS IN FY 82 DOLLARS FOR FY 83 AND SUBSEQUENT YEARS
- COMPLETION OF MODIFICATION IN A MAXIMUM OF 5 YEARS
- QUANTITIES TO BE MODIFIED MUST BE IN THE ACTIVE FLEET
- INSTALLATION OF MODIFICATIONS WILL BE IN-HOUSE AND SHOULD BE DONE DURING SDLM TO THE MAXIMUM EXTENT
- COMPONENT MODIFICATIONS WILL BE STRUCTURED TO CONFORM TO THE REWORK SCHEDULE FOR THAT COMPONENT
- ALL MODIFICATION PROGRAMS MUST BE WELL DEFINED AND CAPABLE OF STANDING ALONE
- EMPHASIS IS ON THE ELIMINATION OF CONCURRENCY
- USE OF FIELD TEAMS IS AUTHORIZED TO COMPLETE PROGRAMS

Figure III-6. Guidance Provided by the Chief of Naval Operations for Submission of OSIP Requirements

NAVAIR NOTICE 4000
GUIDANCE

FROM THE OFFICE OF THE COMPTOLLER, NAVAL AIR SYSTEMS COMMAND (AIR-805):

- PROGRAMS ARE TO BE STRICTURED ON A FULLY FUNDED BASIS

- ALL INSTALLATION COSTS ARE CHARGEABLE TO O&MN

- SLEP STUDIES ARE CHARGEABLE TO O&MN IF THE EFFORT INVOLVES EXTENDING THE USEFUL LIFE WITHIN THE CURRENT PERFORMANCE ENVELOPE, AND TO RDT&EN IF THE EFFORT INVOLVES REDESIGN TO INCREASE THE PERFORMANCE ENVELOPE

- CONTRACTOR ENGINEERING TECHNICAL SERVICES ARE CHARGEABLE TO APN-5 FOR CONTRACTOR TO CONTRACTOR SERVICES. CONTRACTOR TO NAVY EFFORT IS CHARGEABLE TO O&MN

- THE INITIAL ILS PLAN IS FUNDED BY APN-5

- SDLM COSTS ARE CHARGEABLE TO O&MN

- TRAINING MATERIAL, TRAINER MODIFICATION, GROUND SUPPORT EQUIPMENT AND PUBLICATIONS ARE FUNDED BY APN-5

Figure III-7. NAVAIR Comptroller Guidance for Submission of OSIP Requirements

hearings the PM/WSM are required to refine all approved requirements and to testify before the NAVCOMPT personnel. During these hearings NAVCOMPT may cut funds from the approved programs but does not cut programs themselves. Funding cuts are eligible for reclama from PM/WSM organizations at this point and have the backing of NAVAIR and CNO. Along with the requirement to refine all the figures presented to the NAVCOMPT hearings, the PM/WSM are required at this point to interface with the Air-04 and Air-05 personnel to attempt to present as complete a package as possible. The output from these hearings, with CNO approval, is the Navy POM.

The September to October 1981 time period is the point where the Office of the Secretary of Defense (OSD) and the Office of Management and Budget (OMB) review the Navy POM. For the PM/WSM organizations, it is basically a reiteration of the process that comprised the NAVCOMPT hearing. The output of this review is the Decision Package Sets (DPS), which are a threat to the ultimate approval and authority to execute an OSIP. Once again, the PM/WSM has the recourse of reclama to again attempt to justify the OSIP requirement. The final output from this review is the DOD budget which is forwarded to the President for Congressional submission in January 1982.

From January through September 1982, the Congress reviews and rearranges the budget submission as required to gain approval. During this period, the PM/WSM is afforded no opportunity to update the OSIP submit. If Congress is able to perform their review function in a timely manner, the first concurrent resolution is passed authorizing new budget authority by May 15, 1982. At this point in time, an internal apportionment process is used by NAVAIR to delineate to the PM/WSM offices the approved OSIPs

and probable funding levels. This procedure is only used if the funding levels are known to be less than that required to proceed with the approved modification programs.

The primary use of the apportionment process from NAVAIR is to identify to the PM/WSM the approved OSIPs and to allow the organizations enough time to request ECPs from either the proposed prime contractor or the Cognizant Field Activity (CFA). Normal generation time, from the author's experience, indicates that it will take three to four months for the ECP to be written and received. Thus, the ECP will arrive at approximately the same time as the start of the new fiscal year.

Upon receipt of the ECP, the PM/WSM reviews the proposal and generates a decision memorandum stating that the ECP is approved or disapproved. From this point, the ECP process takes over and is the subject of the next section.

A quick review of the OSIP procedure indicates that the process is a long and complicated affair, with much time and effort by the PM/WSM and their staffs in generating a requirement and then justifying it. However, this goes back to the statement that was made earlier; the process must preclude the approval of any marginal or technologically insignificant changes. The high levels of review necessary to approve and incorporate a modification program are a necessity to insure that the most beneficial programs are accomplished with the limited funds provided in the budget cycle. Figures III-8 and III-9 summarize in graphic representation the OSIP procedures and budget cycle interfaces.

OSIP PROCEDURES

1. AIR-102 -- NAVAIR NOTICE 4000 REQUESTS OSIP NOMINATIONS

2. WSM, AIR-04, AIR-05 -- SUBMISSION OF OSIPS TO AIR-102 AFTER COORDINATION WITH GROUND SUPPORT EQUIPMENT AND NAVAL AIR LOGISTICS COMMAND PERSONNEL

3. AIR-102 -- COMPILES AND SUBMITS OSIPS TO OP-506

4. OP-506 -- FORWARDS TENTATIVE PROGRAM OBJECTIVES MEMORANDUM (TPOM) TO NAVAIR; BASIS FOR DETAILED PRICING AND PRIORITIES

5. AIR-102 TO OP-506 -- PROGRAM OBJECTIVES MEMORANDUM (POM) WRITTEN; CONTROL TOTALS PROVIDED BY OP-506, OP-501, OP-92 AND AIR-08

6. AIR-102 -- ASSIGNS OSIP NUMBERS TO APPROVED MODIFICATION PROJECTS AND PREPARES BUDGET BACK UP FOR APN FUNDS

7. AIR-102 -- UPON RELEASE OF CURRENT YEAR FUNDS AND THE RECEIPT OF AVIATION CONFIGURATION CONTROL BOARD (ACCB) ACTIONS ON RESULTING ENGINEERING CHANGE PROPOSALS (ECP) DIRECTS FUNDS FOR IMPLEMENTATION OF THE APPROVED PROGRAMS

Figure III-8. OSIP Submission Procedures

OSIP BUDGET CYCLE

1	SEP	FY 83 OSIP CALL	FY 80
2	OCT		
3	NOV		
	DEC		
	JAN		
	FEB		
	MAR		
4	APR	TPOM	FY 81
5	MAY	POM	
	JUN		
	JUL		
	AUG	NAVCOMP HEARINGS	
6	SEP		
	OCT	OSD/OMB HEARINGS	
	NOV		
	DEC		
	JAN	CONGRESSIONAL REVIEW	
	FEB		
	MAR	OSD/OMB APPORTIONMENT	
	APR		FY 82
	MAY		
	JUN		
	JUL		
	AUG	NAVCOMP APPORTIONMENT	
	SEP	CONGRESSIONAL APPROPRIATION	
7	OCT	EXECUTION	FY 83
	NOV		

Figure III-9. OSIP Budget Cycle

C. ENGINEERING CHANGE PROPOSAL (ECP)

Once the PM/WSM has decided to approve an ECP, the process that initiates the proposal is relatively rapid, in comparison to the time period required to process an OSIP. Within the PM/WSM organization, the class desk will prepare the Aviation Configuration Control Board (ACCB) format. At the same time, the ILS personnel, in conjunction with the CM personnel, will prepare the Cost and Funding Summary, Milestone Plan, and tentatively estimate the types and amounts of spares required to support the modification process. Input data is received from all the various areas necessary to support the modification effort, i.e., engineering design, maintenance, ground support, publication, manuals, etc.

1. Engineering Change Proposal (ECP) Policy and Guidelines

Configuration control and the interface with ILS involves the use of ECPs and requests for deviations and waivers of technical requirements. Its objective is to ensure the smooth functioning of the ECP preparation, evaluation, approval, and implementation [Ref. 13:11] and to preclude marginal or insignificant modifications [Ref. 1:47].

The procedures for ECP processing and accomplishment are broadly discussed in the Joint Services Regulation on Configuration Management, NAVMAT Instruction 4130.1A, dated 1 July 1974. Actual implementation procedures are contained in the Military Standards, DOD-STD 480A and MIL-STD 481. While both are entitled Configuration Control-Engineering Changes, Deviations, and Waivers, DOD-STD 480A provides the detailed instructions and requires the detailed analysis of the impact of implementing an ECP. MIL-STD 481 covers the procedures for submitting an abbreviated ECP.

Two major policy statements generally summarize the ECP policy for the USN. First, all participants must evaluate the proposed modification to assure that consideration has been given to the total impact of each change. The second policy is that each proposed modification should be evaluated on the basis of overall net benefit of the proposed change. It must include the alternative of not incorporating the modification plan [Ref. 9:IV-2].

In accordance with guidance published in the DOD-STD and the NAVMAT and NAVAIR instructions, ECPs are classified into two broad categories: Class I and Class II changes. Class II changes are those that do not effect performance, interchangability, cost, maintainability, reliability, or delivery schedules. Class I changes are required for all other situations. Important to note in this classification scheme is that all proposed changes to an equipment or system after product baseline has been established will be processed as Class I changes [Ref. 14:3-1]. As a means for determining whether a change should be Class I or Class II, Figure III-10 is included from NAVAIR Instruction 4130.1A as a representative model of how the process is determined.

Class I ECPs are assigned priorities for determining the time frame in which they should be reviewed and implemented. The priorities are defined as follows;

a. <u>Emergency</u>

If the modification is not accomplished, it may seriously compromise national security or a hazardous condition may result in serious or fatal injury. Decisions on these changes should be made within 24 hours of receipt.

CHECKLIST FOR CLASSIFYING ENGINEERING CHANGES
(In Accordance with DOD-STD-480A)

This checklist is to be used to classify engineering changes to any hardware specified for control in the contract in accordance with DOD-DTD-480A, paragraph 4.2.1.

The check sheet statements apply to the lowest level specified by the base line identified in the PCI (Product Configuration Identification) as established in the contract.

Place a check ( ) in the approriate YES or NO column for items 1 through 16. A check in the YES column indicates the change is CLASS I whereas no checks in the YES column indicates the change is CLASS II.

	YES	NO	Are any of the factors listed below affected:
1.	___	___	The functional or allocated configuration (contract SPECIFICATION for functional or allocated base line).
2.	___	___	The product configuration identification as contractually specified, (or as applied to Government activities), excluding referenced drawings.
3.			The TECHNICAL REQUIREMENTS listed below contained in the product configuration identification, including referenced drawings, as contractually specified (or as applied to Government activities):
(a)	___	___	Performance (outside stated tolerance).
(b)	___	___	Reliability, maintainability or survivability (outside stated tolerance).
(c)	___	___	Weight, balance, moment of inertia.
(d)	___	___	Interface characteristics.
4.	___	___	Fee, incentive, or cost.
5.	___	___	Schedules.
6.	___	___	Guarantees or deliveries.
7.	___	___	Government furnished equipment (GFE).

Figure III-10. Checklist for Classifying Engineering Changes

8. ___ ___ Safety.

9. ___ ___ Electromagnetic Characteristics.

10. ___ ___ Operational, test or maintenance computer programs.

11. ___ ___ Compatibility with support equipment, trainers or training devices/equipment.

12. ___ ___ Configuration to the extent that retrofit action would be taken

13. ___ ___ Delivered operation and maintenance manuals for which adequate change/revision funding is not on existing contracts.

14. ___ ___ Pre-set adjustments or schedules affecting operating limits of performance to such an extent as to require assignment of a new identification number.

15. ___ ___ Interchangeability, substitutability or replaceability as applied to configuration items (CIs), and to all subassemblies and parts of repairable CIs, excluding the pieces and parts of non-repairable subassemblies.

16. ___ ___ Sources of CIs or repairable items at any level defined by source control drawings.

17. This change is:

(a) __________ CLASS I

(b) __________ CLASS II

Figure III-10. Checklist for Classifying Engineering Changes (Concluded)

b. Urgent

If the modification is not accomplished, it may seriously compromise effectiveness, or could result in injury to personnel or damage to equipment. Also included are those changes necessary to effect interface changes, or to effect time dependent cost reductions. These changes should be acted upon within 15 days of receipt.

c. Routine

Those cases not covered by a. or b. above. Decisions on these ECPs should be made within 45 days after receipt [Ref. 18:5].

In reviewing ECPs, the USN considers the following ramifications before making a determination on the approval/disapproval of the proposal:

1) Relative merit of the proposed modification versus the unchanged equipment or system.

2) Manhours, downtime, technical competence, and level and/or type of facilities required to accomplish the modification.

3) The manhour backlog required to incorporate previously approved modification programs.

4) The effect on spares, repair parts, data, and publications.

5) The effect on delivery schedules.

6) The effect on personnel training and upon training equipment and devices.

7) The effect on existing support equipment and test equipment.

8) The availability of appropriate funds.

9) Risk assessment of the hazard to be eliminated by the modification, if any, shall include hazard severity and probability of occurrence.

10) The effect on reliability and/or maintainability [Ref. 9:IV-5].

2. ECP Processing

Within the USN, ECP processing occurs at the headquarters level (NAVAIR) for aviation weapon system modifications. The body empowered to process ECPs is the Aviation Configuration Control Board (ACCB). Activities submitting ECPs submit them to NAVAIR headquarters attention Code Air-01D4 with information copies to the affected functional areas (Air-04 for logistic support; Air-05 for engineering analysis) and to ASO, Naval Air Technical Service Facility (NATSF), and other affected agencies.

Upon receipt in NAVAIR, the ACCB Secretariat (Air-01D4) is responsible for recording and distributing all Class I ECPs, and requests for Major or Critical Deviations and Waivers. Once the ECP has been deemed acceptable by the PM/WSM, a decision memorandum is issued by the PM/WSM office and is distributed to all who must act on or prepare the ECP for ACCB consideration. Upon receipt of the decision memorandum from the PM/WSM, all action addressees will conduct a detailed evaluation of the proposed modification and prepare required ACCB change request forms, implementation schedules, and financial summaries. The cognizant Air-04, logistics and Air-05, engineering managers are tasked with the responsibility of directing the review and evaluation of the ECPs within their respective groups and with the supporting field activities. In addition, they are also required to keep each other and the PM/WSM informed on any problems that may arise during the review and evaluation and on the progress of the effort.

Processing of ECPs through the Air-04 organization is required to assure that all proposed changes are evaluated by the affected logistics/ fleet support areas and coordinated with controlling custodians affected. The Logistics Manager (LM) accomplishes a preliminary review to determine

whether or not affected logistics areas have been adequately addressed. If the LMs deem that they are, they notify the PM/WSM so that a decision memorandum can be expedited. If logistics information is inadequate, the LM should notify the PM/WSM at the earliest opportunity, so that a revision to the ECP can be requested.

The processing requirement for ECPs by the Air-05 organization begins with a detailed engineering review and evaluation. When the total impact of the change has been determined, an ACCB Change Request/Directive is prepared by the cognizant engineer and forwarded to the PM/WSM. In addition, the Air-05 engineer must determine from the Naval Weapons Engineering Support Activity (NAVWESA) industrial specialist other service users of items or systems affected by the modification and assure complete coordination prior to ACCB action.

Upon receipt of the completed ACCB Change Request Package, the PM/WSM reviews the package for completeness. If necessary, the PM/WSM should conduct pre-ACCB meetings to resolve funding problems, schedules, and desired production/retrofit effectivities, taking whatever corrective action that may be appropriate. Submission of the ACCB Change Request is made after the PM/WSM signs the package, signifying concurrence with the proposal.

Upon receipt of a ACCB Change Request package, the ACCB secretariat screens the package for completeness, adequacy of funding, justification, required concurrences, and proposed implementing actions. Change Requests packages are then scheduled for review before a weekly meeting of the ACCB. During the meeting of the ACCB, the PM/WSM or a designated representative presents the package to the Board. ACCB members participate interactively during the presentation and address areas under their

cognizance. Of importance in this review is that upon ACCB approval, the Chance Request becomes the official directive to all elements/agencies who are to initiate implementing actions. Of additional note is that ACCB decisions are to be implemented exactly as approved.

Figure III-11 is a graphic representation of the processing requirements for ECPs. The flow presented in this diagram is meant to be representative of the discussion above. Figure III-12 is an actual example of the planning process utilized by the A-3 WSM for modification of RA-3B reconnaissance aircraft to the ERA-3B electronic/reconnaissance configuration. Appendix C is excerpted from NAVAIR Instruction 4130.1A for additional guidance in the processing of modification requests. Noteworthy of this appendix is the many examples that can be used for future preparation, review and evaluation of ECPs.

D. FUNDS FLOW AS A FUNCTION OF THE OSIP/ECP PROCESS

The purpose of the OSIP/ECP process is to generate a flow of funds to justified authorized programs after approval, so that implementation can begin. As stated previously, the major source of funds involved in the modification process for aviation systems and equipment comes from the Aircraft Procurement, Navy (APN) appropriation.

Within the APN appropriation, specific Budget Areas (BA) define the authorized use of funds. Generally, the following breakdown is provided for the BAs.

1. BA-1 through BA-4 fund the procurement of Combat, Airlift, Trainer and Special Purpose aircraft respectively, and also fund changes to aircraft and related items in production and are administered by the Program Manager (PM) or Air Project Coordinator (APC).

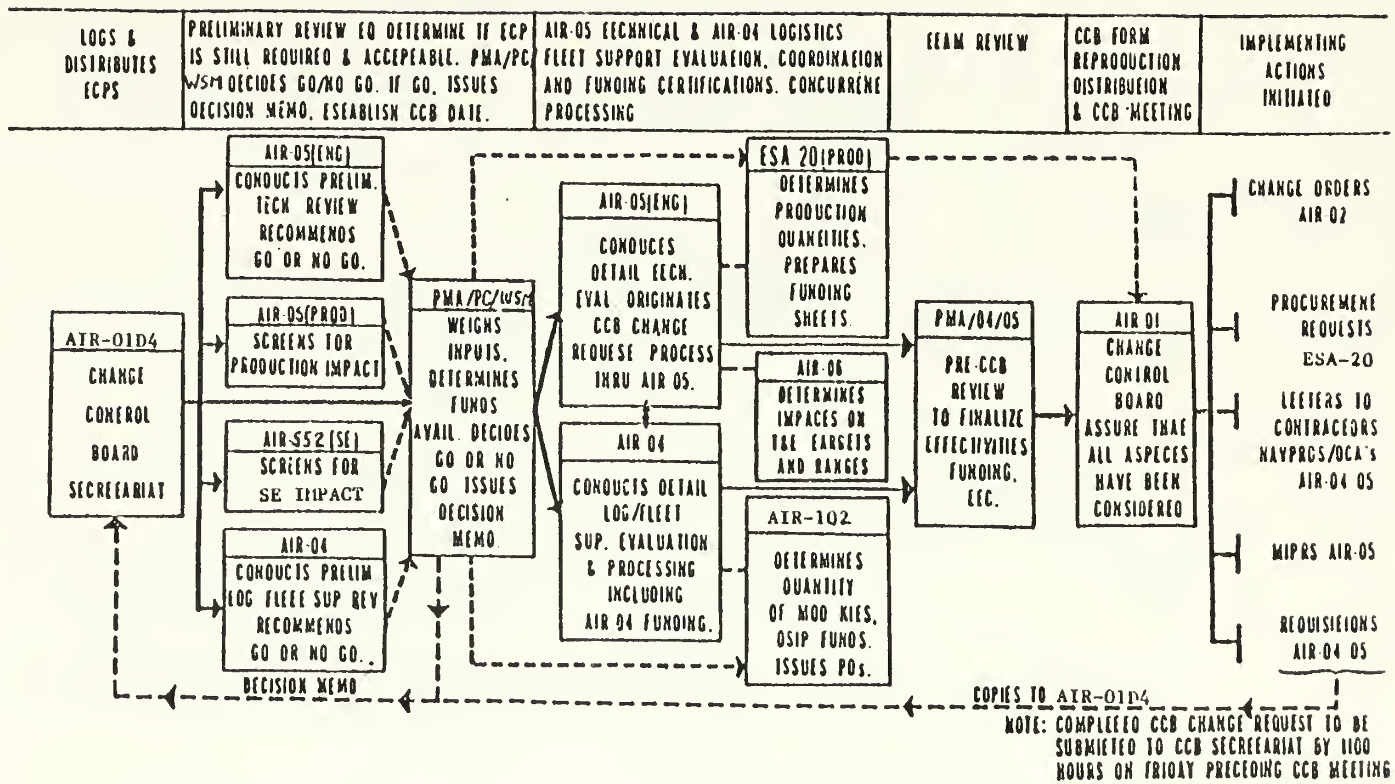


Figure III-11. Engineering Change Proposal Flow Processing Within NAVAIR

ERA-3B MODIFICATION PROCESS

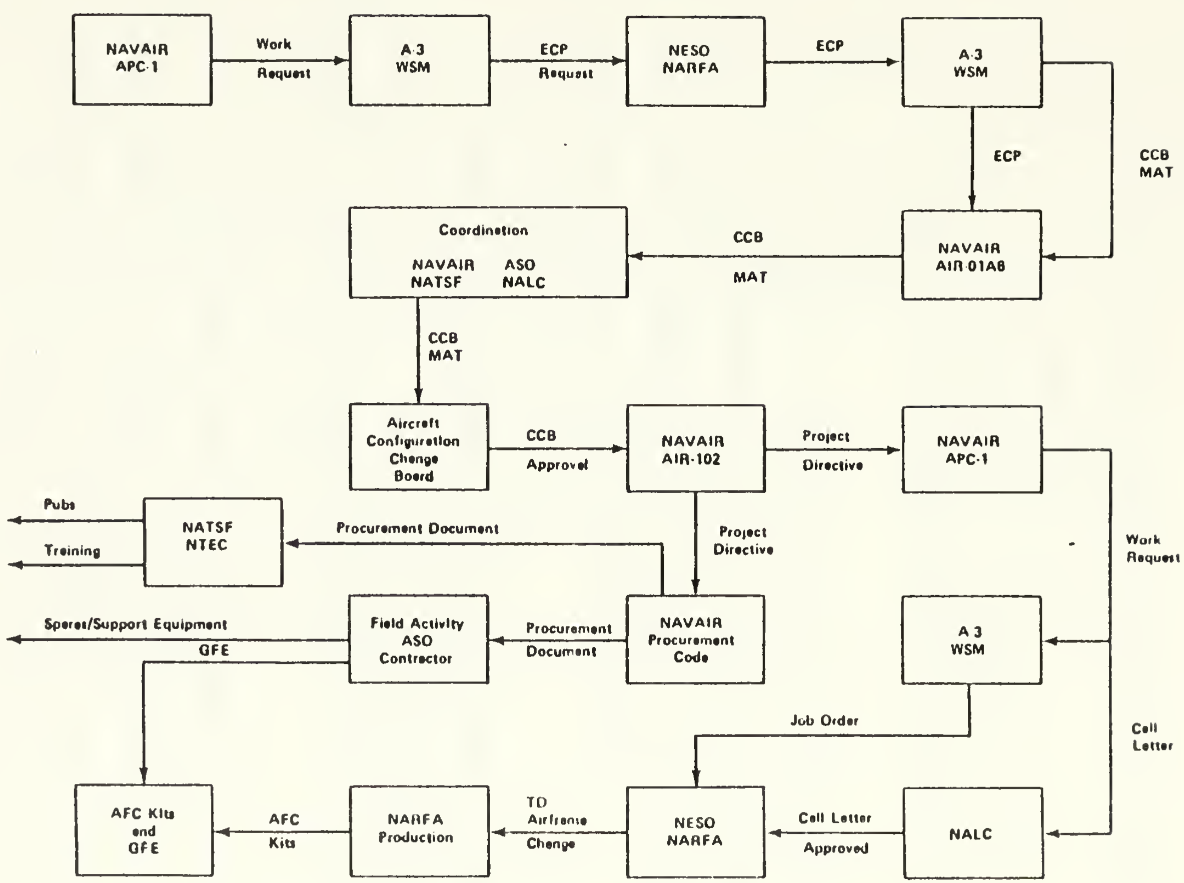


Figure III-12. ERA-3B Modification Process Flow Diagram

2. BA-5 funds are utilized to support the procurement of modification kits and related items of change support for in-service aircraft. Additionally, BA-5 funds support the Service Life Extention Program (SLEP) and Conversion in Lieu of Procurement (CILOP) program. BA-5 funds are administered by Air-102, Aircraft Modification Branch.

3. BA-6 funds provide for:

a. The initial outfitting and pipeline quantities of repairable spares and repair parts for new and modified aircraft.

b. The procurement of repairable spare equipment and repair parts to replenish inventories supporting the operating and flying-hour programs for aircraft already in the fleet.

c. The support of changes to be incorporated by attrition, i.e., engineering drawing or change, technical manual or change, modification of trainers only, modification of Common Support Equipment (CSE), or modification of out-of-production Peculiar Support Equipment (PSE).

BA-6 funds are administered by Air-412.

4. BA-7 funds finance the procurement of aircraft support equipment, production facilities and services. BA-7 funds are administered by various elements within the NAVAIR organization depending upon the type of equipment or facility affected [Ref. 9:C-1].

In addition to the APN funds utilized in the modification effort, Operations and Maintenance, Navy (O&M,N) funds are allocated to the various field activities for use in the installation of modifications and the modification of spares by the NARF as well as the procurement of consumable repair parts. The designation of the "pot" of funds associated with NAVAIR is O&MN-7A. BA-7 relates to the Central Supply and Maintenance portion of the Five-Year Defense Plan. This is the fund that covers

NAVAIRs logistics programs. The largest program covers depot level modification, maintenance, rework, overhaul, and repair of active naval aircraft, engines, air launched weapons, and other aviation related equipment. Other programs funded by this appropriation include engineering and technical services, inspection and contract administration services by Naval Plant Representatives, and technical publications. The O&MN funds are administered by Air-04 through ASO, NALC, NATSF, NAVWESA, and other field activities [Ref. 9:C-3].

The flow of funds from an approved ECP to the implementing activities is delineated by the Cost and Funding Summary, which is attached to the ECP. As shown on the sample in Appendix C, the tasked activity, the implementing activity (NAVAIR fund administrator), and the type and amount of funds are delineated for the purpose of ultimately distributing the funds to the tasked activity. Additionally, it should be noted that funding requirements for the entire life of the program are designated from the first approval.

The distribution of funds is accomplished as a result of a Project Directive (PD) issued by Air-102, once the ECP has been approved by the ACCB. For in-production aircraft managed by a PM, APN-5 funds are directed to the PM, while APN-6 funds are forwarded to Air-412. In the case of an out-of-production weapon system managed by a WSM at a field activity, APN-5 funds are directed to APC-1, the WSM coordinating office located in NAVAIR under the auspsices of Air-01, and APN-6 funds are once again directed to Air-412. APN-5 funds are distributed by the PM and APC organizations via requisitions, Work Requests, Requests for Contractor Procurement, Purchase Orders, Allotments, or whatever form is appropriate.

APN-6 funds are distributed by Air-412 to the various tasked activities via the allotment authorization process.

The major problem here, and the hypothesis of this thesis, is that this distribution by Air-412 has no direct link back to the PM/APC/ WSM office that is tasked with the overall supervision and implementation of the approved ECP. Interviews with the PM/WSM organizations, and personnel experience of the author, confirms this fact as one of the major problems in the coordination of modification control and the flow of information necessary to maintain fiscal accountability. In the next chapter, the author will highlight the mechanisms that are utilized at the ASO in its interface with NAVAIR on the management of modification funds assigned.

E. SUMMARY

In this chapter, a brief overview of the processes required to formulate and implement a modification program was presented. The OSIP procedure, as the initial step in the process can be a long drawn-out affair lasting in excess of two years, but is necessitated by the requirement that modification programs be included in the budget cycle on a timely basis. Furthermore, this process is required to insure that a steady flow of innovative improvements are submitted and that only those that are most worthy are selected for incorporation.

The ECP process, as a follow-on to the OSIP procedures, is the method by which NAVAIR is able to review and evaluate the justification for and the methodology by which a change will be incorporated into a weapon system or equipment. The necessity for this procedure is to ensure that all affected funds are available prior to starting a modification effort.

The flow of funds from the OSIP/ECP process starts in the implementation procedures for an approved modification program. While APN-5 and O&MN funds are easily tracked and monitored by the PM/WSM organizations, APN-6 funds administered by Air-412 have no direct link established as a feedback to the PM/WSM. This lack of feedback has been a source of complaints from all PM/WSM organizations that the author has been associated with.

Chapter IV will deal with the problems associated with the lack of positive feedback on APN-6 funds assigned to the ASO. To deal with this subject, a review of the organization setup of both the ASO and NAVAIR will be presented and the interfaces that exist between the two. The approach will address the reports that are generated to accomplish the management of modification funds and the weaknesses associated with the current procedures.

IV. ANALYSIS OF FUNDS MANAGEMENT

A. INTRODUCTION

This chapter will provide a discussion of the management concepts utilized by the Naval Air Systems Command (NAVAIR) and the Aviation Supply Office (ASO) in the management of Aviation Procurement, Navy (APN) funds in the modification process. Having delineated how the Operational Safety Improvement Program (OSIP) and Engineering Change Proposal (ECP) procedures are applied to generate the flow of funds necessary to implement and accomplish the modification plan, the actual management controls for administering the appropriated funds will now be reviewed. The discussion is limited to the funds administered by the Supply Policy and Management Division, NAVAIR Code 412 (AIR-412), i.e., APN-6 funds utilized to support the modification effort, in conjunction with ASO. This is due to the fact, as previously stated, that this is most often the common source of complaints from the Program Manager (PM)/Weapon Systems Manager (WSM) organizations.

The chapter will provide an overview of the management processes that exist in both NAVAIR and ASO in the management of APN-6 funds. The review will highlight the basic organizational structure, the reporting and feedback methods, the strength and weaknesses of the controls that exist, and the problems resulting from the associated weaknesses. Recommendations for improving the current method of operation will then be provided. The discussion in this chapter is a result of the author's personal background and knowledge, data gained from a review of organizational directives, and instructions and interviews with cognizant personnel in the administering organizations.

B. NAVAIR ORGANIZATION FOR ADMINISTERING APN-6 FUNDS

Within the NAVAIR organization, there are several divisions that operate for the purpose of maintaining a viable Naval Air Force. The primary divisions associated with the management of modification funds are Plans and Programs (AIR-01), Logistics and Fleet Support (Air-04) and the Comptroller (AIR-08). The close interface of these divisions is essential to the success of any modification program to insure that the planning, support, and fiscal requirements all mesh and that the end result is a viable weapon system.

1. Under the auspices of AIR-01 fall the responsibilities for administering the functioning of all PM and WSM organizations. Also included in this division is AIR-102, the Aircraft Modification Management branch. While not fully responsible for the administration of APN-6 funds, this branch is liable for ensuring that the modification process is carried out as specified in the approved Aviation Configuration Control Board (ACCB) Change Directive.

2. The Comptroller Organization, AIR-08, is responsible for ensuring the timely and accurate alloting and reporting of funds assigned to the organization via the budget process for the Department of Defense (DOD). The important interface for the modification process is that an AIR-08 representative must approve all allotment authorizations initiated by the AIR-412 personnel. This serves to allow the close observation of the dispersal of funds to other implementing commands and controls the flow of funds outside of NAVAIR. Additionally, it should be recalled from Chapter III that the AIR-08 organization is also involved in setting the guidelines by which OSIP's are prepared. Close integration between the AIR-08

division and the other NAVAIR divisions is essential for the timely execution of the modification plan and its associated funds.

3. AIR-04 is responsible for the Logistics and Fleet Support function within NAVAIR. To provide the services required by the operating forces, AIR-04 is subdivided into five major branches: Logistics Management Division, AIR-410; Maintenance Policy and Engineering Division, AIR-411; Supply Policy and Management Division, AIR-412; Weapons Training Division, AIR-413, and Ground Support Equipment Management Division, AIR-417. Each of these separate divisions is responsible for a portion of the logistic support provided by NAVAIR in supporting the operating fleet.

a. AIR-410 is responsible for the overall logistic management function for the assigned aircraft. Within this division personnel are assigned as Assistant Program Manager, Logistics (APML) to specific type aircraft. As such, these people are responsible for coordinating with the other divisions within AIR-04 for the specific requirements provided by the other divisions, i.e., maintenance, engineering, supply support, training, and ground support. The APML reports directly to the PM or WSM for the aircraft system.

b. AIR-411 provides maintenance and engineering policy to the APML and to other divisions within AIR-04 on a required basis. Tasking for most of the studies done by the AIR-411 personnel is the direct result of a modification to the aircraft or systems, or the result of a failure in the reliability or maintainability of certain pieces of equipment.

c. AIR-413 provides information to the AIR-04 division on the training and publication requirements necessary to meet the desired level of maintainability, reliability, and level of repair capability.

d. AIR-417 functions in much the same manner as AIR-410, except that it deals in the area of ground support equipment instead of aircraft and equipment. This division must also coordinate its effort with the other divisions in AIR-04, or risk the possibility of procuring support equipment that is unusable on the aircraft for which it was intended.

e. AIR-412 is assigned responsibility for supply support policy and management. To provide this support, AIR-412 is organized along functional lines within the matrix management format utilized by NAVAIR to support operating aircraft of the USN. Various desks within the AIR-412 organization are assigned types of aircraft for which they oversee the supply support function. Usually, these positions are aligned with specific communities of aircraft, i.e., Patrol/ASW, fighter, attack, training, etc. The purpose of this alignment is to provide for close coordination between the PM/WSM organization, the APML in AIR-410 and the cognizant supply support area within AIR-412. The single point of contact within AIR-412 for the C-130 Hercules aircraft, for example, would be code AIR-412B3. By setting up this single point of contact, close coordination and interface between the AIR-412 personnel and other activities can be established and maintained.

Also contained in the AIR-412 organization is a Financial Manager, responsible for the administration and allotment of funds to the various activities involved in the modification process. This person is tasked with the timely and cognizant alloting of funds to those activities designated by the approved ACCB Change Directive for implementation of ECP. Figure IV-1 is a representative sample of the format utilized to allot funds appropriated for several modification programs to ASO. Noteworthy in this format is the fact that although the funds are alloted and

ALLOTMENT/SUBALLOTMENT AUTHORIZATION
NAVCOMPT FORM 372 (REV. 6-57)

AIR-4123B1:CVH (2-2-77)

ALLOTMENT NO. N0001977ALJC403
SUBALLOT. NO.

FROM: Commander, Naval Air Systems Command
Dept of the Navy, Washington D.C. 20361

TYPE OF AUTHORIZATION: ☐ NEW ☒ AMEND. NO.

TO: (Activity Code)

Commanding Officer
Navy Aviation Supply Office
700 Robbins Avenue
Philadelphia, PA. 19111

ALLOTMENT ACCOUNTING OFFICE
ACCOUNTING NO. N00383
(Name and address)
ASO, Philadelphia, Pa.

TITLE OF APPROPRIATION AND SUBHEAD: Aircraft Procurement, Navy 1977

APPROPRIATION SYMBOL AND SUBHEAD: 1771506 46JC

AUTHORIZATION

The total of this authorization is allotted to fund the purpose stated under "Instructions" and is subject to all limitations specified therein. All financial control, jurisdiction, and responsibility under Section 3679 R. S. and regulations thereunder, for the total amount allotted, is passed to the addressee. To accomplish the purpose of this allotment, amounts assigned to budget projects may be adjusted within the total limitation but cumulative adjustments to any one budget project totaling 10% or more must be reported to the allotter in accordance with NavCompt Manual, Volume 2.

PROJECT NO.	TITLE OR DESCRIPTION	PREVIOUS ADJUSTED AUTHORIZATION	AMOUNT OF THIS AUTHORIZATION
01	MODIFICATION SPARES - ASO	$1,872,337.00	$5,535,498.00
02	MODIFICATION SPARES -Reliability/ Maintainability	-0-	50.00
	Expires for commitments on 30 Oct 1977		
	Expires for obligation of commitments on 30 Dec 1977		
	TOTAL	$1,872,337.00	$5,535,548.00

INSTRUCTIONS:

See attched list

New Allotment Total: $7,407,885.00

For the procurement of new spares, repair parts and kits to modify/update spares. Transfer of funds between Project Numbers on this allotment will be done by formal amendment only.

Copy to:

NAFC (322)	AIR-410G (F-4)
AIR-4123B1	AIR-4103A1 (CH-46)
AIR-01A64	AIR-4101B6 (EC-130)
AIR-4148B2	AIR-4101A7 (A-7)
AIR-410	AIR-4101A1 (F-14)
AIR-41721A	AIR-411B1 (PPCs)
AIR-4113	

DATE: FEB 11 1977

APPROVED: M. A. OTEGUI, Head
APN Budget Branch

U.S. GOVERNMENT PRINTING OFFICE 1959 O—529677

Figure IV-1. Sample Allotment of APN-6 Funds to ASO

AIR-4123B1:CVH (2-2-77)

Allot No. N0001977ALJC403 Amend #5
to ASO Philadelphia, PA.

Ref:	(a) F-4, OSIP 4-76, ACCB #731-326S3	$ 230,000
	(b) F-4, OSIP 4-76, ACCB #761-392S2	313,100
	(c) F-4, OSIP 4-76, ACCB #761-392S2	18,795
	(d) F-4, OSIP 4-76, ACCB #761-435R2	456,000
	(e) F-4, OSIP 4-76, ASO Support	1,000,000
	(f) RF-4, OSIP 13-75 ASO Support	2,000,000
	(g) CH-46E, OSIP 4-73, ASO Support	1,000,000
	(h) EC-130Q, OSIP 21-74, ACCB #741-348R2	165,000
	(i) TA-7C, OSIP 19-74, ACCB #771-90	112
	(j) RA-5C, R&M, ACCB #771-86	50
	(k) F-14, Compatibility, ACCB #761-512	2,000
	(l) PPC-86, CCCB #742-147	2,057
	(m) PPC-87, CCCB #752-99	1,654
	(n) PPC-88, CCCB #752-206	30,600
	(o) RF-4, OSIP 13-75, ACCB #751-256S3	24,250
	ACCB #751-255S3	9,800
	(p) F-14, Compatibility, ACCB #761-259	282,130
		$5,535,548

Figure IV-1. Sample Allotment of APN-6 Funds to ASO (Concluded)

administered by AIR-412, approval of the allotment is still retained by the Comptroller, AIR-08. This cross check serves to reduce any possibility of errors in the allotment process and to preclude alloting funds in excess of those authorized by higher authority and the Change Directive. Additionally, it should be noted that the cognizant APML receives a copy of the allotment form. This helps to insure that the matrix management structure is informed of the fact that funds have been alloted to the implementing activity for processing of the assigned task.

Figures IV-2, IV-3, and IV-4 are the organization charts for AIR-01, AIR-04, and AIR-08, respectively. They are included to give the reader an understanding of the structure utilized by NAVAIR in supporting aircraft of the United States Navy (USN).

As stated in Chapter III, AIR-412 is the administering office for APN-6 modification funds. In this regard, AIR-412 must coordinate with the other divisions within AIR-04 to insure that the proper offices are notified of the allotments and that the requirements from all the other divisions are passed to the implementing activities. In the author's opinion, this integration of effort is mandatory to the successful completion of a modification effort. Furthermore, this provides a system of checks and balances over the modification effort to promote the efficient and effective use of resources assigned to the project. Without the close coordination and interface of the AIR-04 offices, no modification program will be successfully completed without serious delays and probable cost overruns.

AIR-01 ORGANIZATION

01
DEPUTY COMMANDER AND PROJECTS DIRECTOR

11	12	13	01
ASST DEP CDR FOR ANTI-AIR WARFARE RECONNAISSANCE AND ELECTRONIC WARFARE PROJECTS	ASST DEP CDR FOR STRIKE WARFARE AND ASSAULT PROJECTS	ASST DEP CDR FOR ASW AND SUPPORT PROJECTS	DEP CDR FOR PLANS AND PROGRAMS
E-2 PMA-231	A-6/EA-6 PMA-234	P-3 PMA-240	EXECUTIVE DIRECTOR AIR-01A
F-14/PHOENIX PMA-241	A-7 PMA-235	S-3A PMA-244	ASST DEP CDR, PLANS AIR-01B
REWSON PMA-253/PME-107	DEF. SUPPRESSION PMA-242	AIR ASW ACOUSTICS PMA-264	ADMIN OFFICER AIR-01C
INFRARED MISSLES PMA-259	H-1/H-3 PMA-255	LAMPS PMA-266	CONFIGURATION MGMT AIR-01D
SPARROW MISSLE PMA-262	A/V WEAPONS PMA-257	NALCOMIS PMA-270	PLANS DIVISION AIR-101
AMRAAM PMA-268	HARPOON PMA-258	VTXTS PMA-273	AIRCRAFT MODIFICATION DIVISION AIR-102
SUPPORT AIRCRAFT PMA-271	H-53/H-46 PMA-261	WSM COORDINATION APC-1	DEF. SECURITY ASST DIVISION AIR-103
ATAPS PMA-272	F-18 PMA-265	KX TANKER APC-9	PROGRAMS DIVISION AIR-104
	V/STOL PMA-269		ADP MGMT DIVISION AIR-105

Figure IV-2. Organization Chart for NAVAIR-01

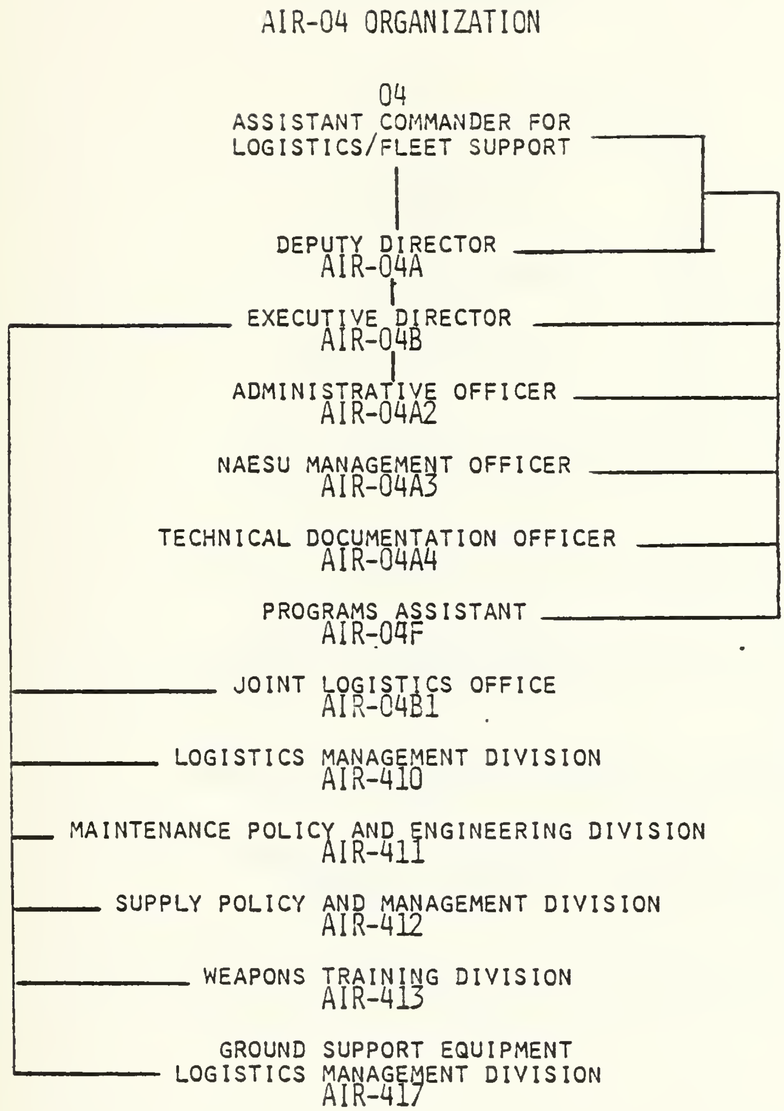


Figure IV-3. Organization Chart for NAVAIR-04

AIR-08 ORGANIZATION

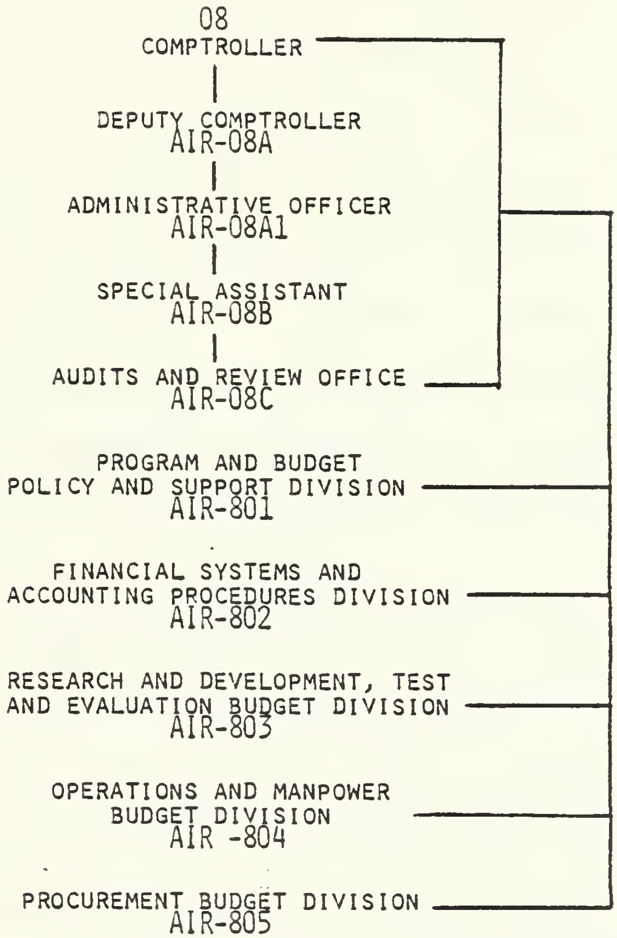


Figure IV-4. Organization Chart for NAVAIR-08

C. ASO MANAGEMENT OF APN-6 FUNDS

1. Background

ASO was established in 1941 because of the need for a single, central, control agency dedicated for the logistics support of the Naval Air Force [Ref. 20:1]. Prior to the organization of ASO as the centralized inventory control point for naval aviation, the need for aircraft spares was satisfied by one of several Navy bureaus or air stations. Spares were procured on an as required basis, or were manufactured as necessary. The advent of World War II spelled the end for this type of support and facilitated the growth of an organization that was to be capable of responding to the need for support on a global basis. Over the past 40 years ASO has evolved from a highly manual operation, to one that incorporates several computers and programs that compute and predict the required spares and repair parts necessary to support the sophisticated aircraft and systems in the USN inventory.

Today ASO manages approximately 213,000 consumable aviation peculiar repair parts and 53,000 repairable assemblies [Ref. 21:IV-1]. To insure proper support is provided to the operating forces, ASO utilizes a budget that is close to $2 billion for fiscal year 1981. This budget comprises the requirement for rework of repairable assemblies, procurement of new repairables and the procurement of consumable items.

2. Organization

ASO is organized for the purpose of providing logistic support to the operating units of the Naval Air Forces. To provide this support, ASO is divided into four major offices: Operations, Purchase, Comptroller, and Planning and Data Systems. Tasked with the overall responsibility for logistic support in the area of spare and repair parts, these offices

within ASO must work in close harmony to produce the output necessary to provide the desired level of support.

In the administration and utilization of modification funds assigned to ASO as an implementing activity, each of the four branches has an assigned task to perform. Original receipt of funds and responsibility for the monitoring of expenses specifically related to the modification funds is performed by the Comptroller's office. The Operation's office is responsible for the processing of technical data and requirements information into a procurement package that will adequately support the modification effort. Upon higher level review and approval, the Purchasing Branch is responsible for negotiating contracts for the material requirements. Throughout this process, the Planning and Data Systems office is tasked to provide the necessary planning data, i.e., number of aircraft to be modified, number of configurations to support, support sites that must have operating inventory, etc., and the data processing necessary to support the ASO requirement for file data and inventory control.

Thus, the modification process at ASO is one that must be conducted on a coordinated basis to insure that it is properly executed on a timely basis, with the proper emphasis given to the various parameters that are involved in seeing the process through to completion. Figure IV-5 is the organizaton chart for ASO, showing the interrelationships of all the various offices within the organization.

As can be seen from Figure IV-5, the Operations office is the largest and most complex of the subunits within the ASO organization. Within the Operations office, four divisions are utilized to effect the desired support of aircraft and equipment. The Weapons Logistics (WL) division is oriented toward supporting in-production aircraft systems.

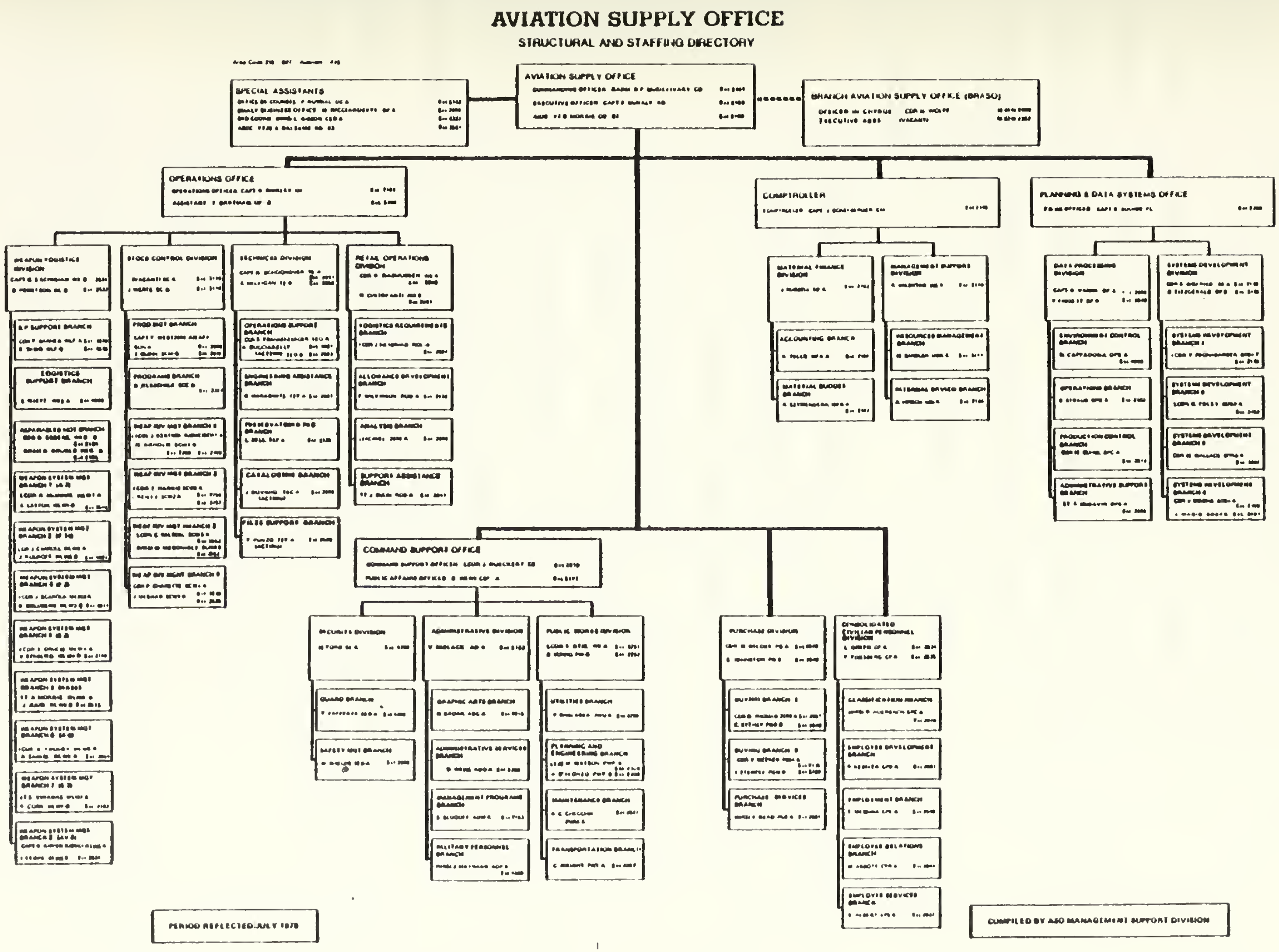


Figure IV-5. Organization Chart for the Aviation Supply Office

The Stock Control (SC) division manages all out-of-production aircraft, aircraft engines, common aeronautical equipment, and ground support equipment (GSE). The Technical division, which is co-located with the supported WL/SC division, maintains the technical compliance specifications for the assigned aircraft type and advises the WL/SC branches on matters pertaining to the technical capability, engineering performance and requirements related to the cataloging of items for ASO files. The Retail Operations division determines the actual allowances for support material based on parameters provided by the Planning and Data Systems office and various Navy commands. The interface of these four divisions is essential to the support of aircraft systems and equipment as well as the modification effort.

The essence of ASO's purpose is embodied in the WL/SC divisions. These divisions and their branches provide the necessary interface between the user commands, the Hardware Systems commands (NAVAIR, NAVSUP, NAVMAT), and the contractors, so that the required supply support can be provided to the aviation community. It is the author's opinion, based on interviews with cognizant management personnel, that a failure on the part of these divisions and branches to execute the budget and fiscal guidance provided them, will inevitably lead to the failure of support in some aspect for the operational units. It is from these divisions and branches that the basis for ASO's interface to the Integrated Logistic Support (ILS) field and the modification process is effected.

3. ASO ILS Interface

To facilitate the modification process, ASO, as a tasked activity in the implementation of Class I ECPs, participates in the Integrated Logistic Support Management Team (ILSMT) meetings for all Navy aircraft.

These meetings are held to provide for overall ILS management direction. The team is composed of selected personnel from all support organizations and is the primary means of defining, managing, and achieving modification objectives. ASO representation at ILSMT meeting is usually handled by the branch officer for the particular aircraft. Figure IV-6 illustrates the composition of a typical ILSMT. Important in this figure is that the representative from ASO is designated an essential team member. In the author's opinion the main purpose of the ILSMT is to achieve effective, economical, and timely support of a weapon system modification through the use of communication improvement.

4. ASO Budget and Modification Funds Flow

Budgeting for aviation spares and repair parts is a continuous process at ASO. Because of the magnitude and diversity of the budget, and differing appropriations, the related work tends to persist throughout the year. Additionally, budgeting is not limited to consideration of requirements for just the current and next fiscal year. It is normal to have in being, or in process, strategic plans extending 6 or 7 years into the future.

The development of budget estimates covers not only the procurement of aviation spare and repair parts but also the funds for the repair of such material after it is procured. Furthermore, the budget effort relates to both investment material (purchased for initial support of new or modified weapon systems) and replenishment material (for continuing support requirements) [Ref. 22:2].

In developing budgetary estimates, the Comptroller works closely with the ASO weapons managers in the various WL/SC branches who are responsible for providing the logistics support for the weapon systems.

TYPICAL COMPOSITION OF A USN
INTEGRATED LOGISTIC SUPPORT MANAGEMENT TEAM

- A TYPICAL USN INTEGRATED LOGISTIC SUPPORT MANGEMENT TEAM FOR MAJOR PROJECTS AND MODIFICATION PROGRAMS IS COMPOSED OF MEMBERS FROM THE FOLLOWING COMMANDS:

* DENOTES ESSENTIAL TEAM MEMBERS

- * - NAVAIR; CHAIRMAN (FOR NAVAIR MANAGED PROGRAMS)
- * - WEAPON SYSTEM MANAGER; CHAIRMAN (FOR TRANSITIONED PROGRAMS)
- * - CHIEF OF NAVAL OPERATIONS REPRESENTATIVE (SPONSOR)
- \- CHIEF OF NAVAL RESERVE REPRESNTATIVE (WHEN INVOLVED)
- * - AVIATION SUPPLY OFFICE REPRESENTATIVE
- \- COMMANDANT OF THE MARINE CORPS REPRESENTATIVE (WHEN INVOLVED)
- * - NAVAL AIR TECHNICAL SERVICES FACILITY
- * - COMMANDER, NAVAL AIR FORCES ATLANTIC OR PACIFIC
- \- CG FOURTH MARINE AIR WING (WHEN INVOLVED)
- \- FLEET MARINE FORCES ATLANTIC OR PACIFIC (WHEN INVOLVED)
- * - CHIEF OF NAVAL AIR TECHNICAL TRAINING
- * - NAVAL AIR LOGISTICS CENTER
- * NAVAL AIR REWORK FACILITIES
- * NAVAL/AIR FORCE PLANT REPRESENTATIVES OFFICE (DURING PRODUCTION PHASE)
- * NAVAL AIR ENGINEERING CENTER

Figure IV-6. Organization of a Typical USN ILSMT

this provides for the close interface of financial and supply considerations. In this joint process, ASO utilizes the Stratification Program, a standardized DOD computerized process which determines by simulation what items will be required for prcurement and in what quantities.

From the budgeting process, ASO receives the funds necessary to accomplish its routine business as well as funds for the modification process. Basically, the two segments of modification funds are APN-6; Modification Initial (MOD I), which are funds allocated to ASO for the procurement of new items introduced as a result of a modification to an operating aircraft or system, and APN-6; Modification Follow-On (MOD FO), which are the funds used for follow-on support for on-going modification programs [Ref. 21:I:2]. It should be noted that MOD I funds are not budgeted for by ASO. They are the direct result of the allocation process from AIR-412 following the approval of an ECP at the ACCB. MOD FO funds are budgeted for by ASO as part of their normal replenishment budget.

Table IV-1 is the summary of the ASO budget as of 8 February 1981. This table portrays the funding levels for the past three fiscal years by appropriation and budget area. Emphasis has been added to the MOD I line for each year to make it easily discernable. Noticeable also is that no line exists for the MOD FO budget. This is because, as stated earlier, the MOD FO budget is computed as part of the normal APN-6 replenishment budget. Thus, buried within the FY 81 APN-6 replenishment figure for annual obligation plan is the total for MOD FO. To determine the amount that is applicable to this, Appendix D is provided, which is the actual allotment of funds to the WL/SC branches. By adding up the lines for MOD FO assigned, the reader can obtain a dollar value total for the MOD FO funds authorized for FY 81. Figure IV-7, excerpted from the ASO FY 81

TABLE IV-1. SUMMARY TOTALS FOR ASO BUDGET FOR FISCAL YEAR 1981, 1980 and 1979

SUMMARY TOTALS

ALLOTMENT — AS OF 0730 MONDAY 08-02-81, DAY 81039, PERCENT OF FY - 35.8

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ALLOTMENT	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
FY81 NSF INITIAL	27278	24900	7255	17645	26.5	24900	11309	13591	4054	9720	13774	21029
FY81 NSF REPL	591249	331002	170438	160564	28.8	427302	300724	126578	130286	112290	242576	413014
FY81 NSF FIELD ACT	19405	10368	2806	7562	14.4	10368	3253	7115	447	0	447	3253
FY81 NSF BRASO R	23000	12900	3354	9546	14.5	12900	5027	7873	1673	0	1673	5027
FY81 APN 8R INIT	0	0	0	0	-	0	0	0	0	3897	3097	3897
FY81 APN 6 INIT	101543	29981	353	29628	.3	29981	1457	28524	1104	19049	20153	20506
FY81 APN 6 MOD I	6964	200	0	200	.0	200	0	200	0	0	0	0
FY81 APN 6 PGSE I	20213	11598	667	10931	3.2	11598	1773	9825	1106	456	1562	2229
FY81 APN 6 REPL	615939	362944	117448	245496	19.0	362944	211887	151057	94439	153522	247961	365409
FY81 APN 7 GSE	17400	16000	4040	11960	23.2	16000	7561	8439	3521	19544	23065	27105
FY81 APN 7 CGSE	400	3000	0	3000	.0	3000	0	3000	0	0	0	0
FY81 APN 7 RIK	555550	200	0	200	.0	200	0	200	0	0	0	0
FY80 APN 6 INIT	13353	14029	13088	941	98.0	14029	13504	525	416	96	512	13600
FY80 APN 6 MOD I	2158	2158	1325	833	61.3	2158	1596	562	271	146	417	1742
FY80 APN 8 PGSE I	3772	3772	2174	1598	57.6	3772	3549	223	1375	160	1535	3709

TABLE IV-1. SUMMARY TOTALS FOR ASO BUDGET FOR FISCAL YEAR 1981, 1980 and 1979 (Continued)

SUMMARY TOTALS

ALLOTMENT — AS OF 0730 MONDAY 08-02-81 DAY 81039 PERCENT OF FY - 35.8 — STATUS OF FUNDS REPORT DOLLARS IN THOUSANDS

ALLOTMENT	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
FY80 APN 6 REPL	854881	302260	292101	10159	34.1	302260	300243	2017	8142	4397	12539	304640
FY80 APN 7 GSE	0	20180	19594	586	-	20180	20016	164	422	3795	4217	23811
FY80 APN 7 COOPLOG	0	275	0	275	-	275	0	275	0	0	0	0
FY 80 APN 7 RIK	0	5900	4371	1529	-	5900	5302	598	931	61	992	5363
FY80 APN 1 SPC PUR	0	2248	1583	665	-	2248	1850	398	267	312	579	2162
FY80 APN 5 SPC PUR	0	46	46	0	-	46	46	0	0	0	0	46
FY80 APN 7 SPC PUR	0	15	7	8	-	15	14	1	7	0	7	14
FY80 APN 2 SPC PUR	0	549	502	47	-	549	502	47	0	56	56	558
FY79 APN 3 SPC PUR	0	1100	1094	6	-	1100	1094	6	0	0	0	1094
FY79 APN 6 INIT	20532	20532	19804	728	96.4	20532	20203	329	399	85	484	20288
FY79 APN 6 MOD I	9407	9400	9400	0	99.9	9400	9400	0	0	0	0	9400
FY79 APN 6 PGSE I	3612	3610	2998	612	83.0	3610	3270	340	272	30	302	3300
F79 APN 6 REPL	13753	289071	287849	1222	92.9	289071	287852	1219	3	418	421	288270
FY79 APN 7 GSE	16450	16936	16198	738	98.4	16936	16793	143	595	475	1070	17268
FY79 APN 7 CGSE	400	400	165	235	41.2	400	215	185	50	0	50	215

TABLE IV-1. SUMMARY TOTALS FOR ASO BUDGET FOR FISCAL YEAR 1981, 1980 and 1979 (Concluded)

SUMMARY TOTALS

ALLOTMENT — AS OF 0730 MONDAY 08-02-81 DAY 81039 PERCENT OF FY - 35.8 — STATUS OF FUNDS REPORT DOLLARS IN THOUSANDS

ALLOTMENT	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
FY79 APN 6 S-3A	644	643	620	23	96.2	643	620	23	0	0	0	620
FY79 APN 6 F4	192	192	192	0	100.0	192	192	0	0	0	0	192
FY79 APN 1 SPC PUR	0	8350	5601	2749	-	8350	6302	2048	701	2099	2800	8401
FY79 APN 5 SPC PUR	0	548	384	164	-	548	384	164	0	0	0	384
FY79 APN 2 SPC PUR	0	138	110	28	-	138	116	22	6	0	6	116
FY79 APN 4 SPC PUR	0	40	48	8-	-	40	48	8-	0	0	0	48
FY81 O&MN	134613	134613	81509	53104	60.5	134613	122673	11940	41164	1442	42606	124115
FY81 GSE O&MN	500	500	37	463	7.4	500	320	180	283	0	283	320
FY81 O&MN DEO MGMT	186	186	1175	989-	631.7	186	2800	2614-	1625	0	1625	2800
FY81 O&MN SSSCP	650	650	111	539	17.0	650	257	393	146	0	146	257
FMS R OF R	0	30474	19846	10628	-	30474	21118	9356	1272	0	1272	21118

APN-6
FY81 REPLENISHMENT
MOD

AIRCRAFT TYPE	MODIFICATION	FUNDS
A6	Tram	28.602
A6	CAINS/CNI	2.392
A6	AMTI	.096
A6	Arresting Hood	.005
A6	A6E to KA6D	.765
EA6	EA6A Update	.551
EA6	EA6B ALE 41 (Prov)	.034
EA6	EA6B ALE 39	.025
EA6	EA6B ALE 39	.017
A7	A7 ARN-84/ARN-118	.131
A7	A7 FLIR	11.877
A7	A7 ALE 39	.067
AV8	AV8C CILOP	.204
AV8	Emergency Power	.037
F4	F4J to S	1.775
F8	F8 ALE 39	.012
F14	Carbon Brake	.309
F14	Hydr. Aux. Brake	.205
OV10	OV10 ALE 39	.090
H46	CH46E	4.362
H46	H46 ALE 39	.100
H53	H53 ALE 39	.352
H1	Tow Mod	1.030
H2	SH-2 Avionics	8.013
P3	Teletype	.149
P3	TACNAV	2.696
P3	P3 FLIR	1.598
P3	Harpoon	.709
P3	P3B Instr. Update	.176
EP3	EP3 SLEP	1.405
E2	ARPS	3.731
C130	C130 CILOP	.164
C130	KC130 CILOP	.133
Various	ALR 45	1.044
	Total	72.856

Figure IV-7. FY 81 APN-6 Replenishment/Modification Account Breakout

Budget Execution Plan, delineates the actual total dollar value for the FY 81 MOD FO budget and equates it to aircraft type and OSIP number. This figure is useful in that it portrays the amount of funds that are budgeted for the MOD FO for specific aircraft, yet it does not provide information on what material is required. This figure is also the only delineation of MOD FO available at ASO that equates dollar value for MOD FO to aircraft type.

5. Requirements Processing

To facilitate the procurement of spare and repair parts necessary to support the operating units of the aviation community, ASO utilizes the Item Manager (IM) concept. Each IM is assigned specific items by National Stock Number (NSN) to manage. The assignments are based on experience and ability of the IMs.

IMs are hired at ASO on a trainee basis, such that the first two years that they are onboard, they are exposed to a wide variety of situations; while at the same time, having a training facilitator to review and approve their work. After the initial probation period, trainees are assigned as IMs throughout the various WL/SC branches.

In the processing of requirements related to a modification program, the first notification ASO received is usually the receipt of the draft ECP. The draft ECP is routed to the applicable WL/SC branch and to the cognizant IM for concurrence on support of the plan. The draft is returned to the ASO representative to the ACCB, who then hand carries the ASO concurred copy back to the weekly meeting of the ACCB. Upon approval by the ACCB, the ECP and its associated change directive facilitate the flow of funds into ASO.

Figure IV-8 illustrates the spare and repair parts acquisition cycle that occurs after ASO receives funds for the modification process. Initially, funds are directed to ASO to procure the interim support that will be necessary to support the first few aircraft to be modified. This material will be necessary to provide the required support until the actual delivery of provisioning spares at the Material Support Date (MSD). Additionally, funds are provided early on to support the contracting for the provisioning requirements statement (PRS), and the submission of the Long Lead Time (LLT) items list. After this initial flurry of action to support the modification effort, approximately a year and a half is required for the establishment of items required to be procured as spares to support the program. Once the spare and repair parts are ordered, an additional one and one half years is required to receive the material. Thus, as depicted in Figure IV-8, the time involved in the process from first receipt of funds until ASO is in a position to support the modification spans approximately three and one half years.

6. Feedback from ASO to NAVAIR

Throughout the spares and repair parts acquisition cycle, feedback of information on the progress made by ASO must be furnished to NAVAIR. The requirements to keep NAVAIR and the cognizant PM/WSM offices informed of actions taken to implement the requirements of the change directive is accomplished in three ways; formal reporting via the Modification Report to NAVAIR, interface with the PM/WSM organizations during the ILSMT and response to action items directed to ASO, and by telephonic reporting. While all of these reporting methods were felt to be essential by the PM, WSM, APML, and ASO personnel that were interviewed, the common feeling of the interviewees was that the ability of these feedback methods to provide

SPARES AND REPAIR PARTS ACQUISITION FLOW CHART

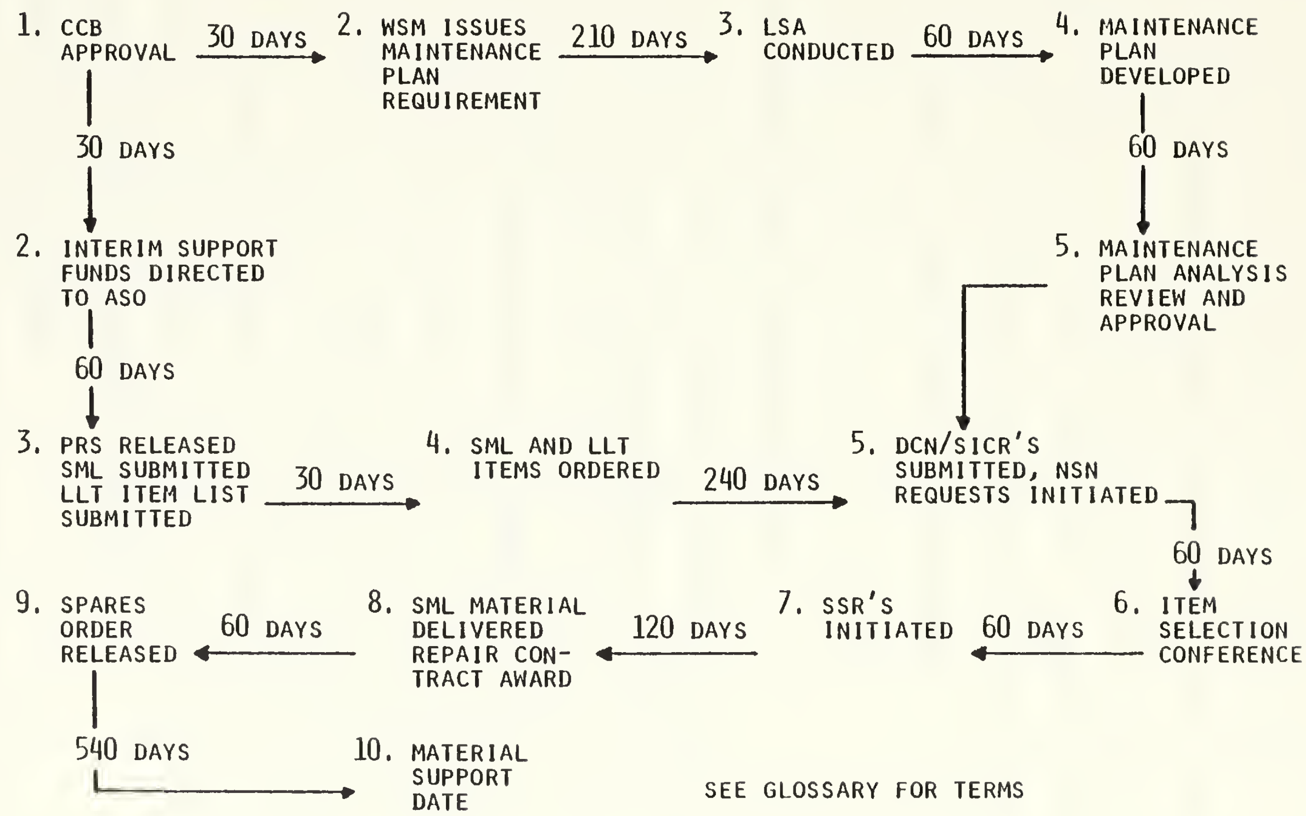


Figure IV-8. Spare and Repair Parts Acquisition Flow Chart

a complete and accurate picture of the efforts of the implementing activity's efforts was too disjointed to be of much practical and timely use. Figure IV-9 illustrates the typical monthly ASO modification follow-on funds report. Apparent from this report is that no indication of what was procured is available; only that the funds have been spent. The ILSMT and telephonic reports serve the purpose of providing the information to the PM/WSM organization on what was actually procured to support the modification program. Taken as a whole, these three reporting methods might provide the necessary information to the appropriate offices if the data contained in each reporting method could be summarized in a single report on a monthly basis.

D. PROBLEMS AND WEAKNESS WITH THE PRESENT SYSTEM

With the structured flow of funds and information between NAVAIR and ASO, the question arises as to why the management of modification funds is source of so many complaints? Given the availability of funds and the people necessary to make the required procurements, why are the PM/WSM offices continually complaining about the lack of adequate support for the modification program? In the author's opinion, the answer lies in the inherent problems that exist in the modification program structure presented in this and previous chapters. The following problems and weaknesses, as perceived by the author's analysis, are the most prominent reasons for the complaints of inadequate support.

1. Inadequate Control of Funds

As stated earlier, the current structure of modification funds in ASO provides for two separate accounts to accommodate the two different sources of funds. The setup for MOD I funds is adequate in that this set

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FM MBP2-3 FOR AIR-04, 412, 4123

SUBJ: EXECUTION OF FY 80 AND FY 81 MODIFICATION FOLLOW-ON REPLEN SPARES (APN-6)

A. NAVAIR 272236Z SEP 78

B. ASO LTR MBP1-1:APC: OF 28 AUG 78

1. IAW REFS A AND B MODIFICATION FOLLOW-ON SPARES COMMITMENTS/ OBLIGATIONS THRU 1 DEC ARE AS FOLLOWS: (IN MNS)

OSIP NO	AIRCRAFT TYPE	AMT COMMITTED	AMT OBLIGATED
4-76	F-4	.355	2.572
4-73	H-46		.944
8-78	H-2		.268
13-75	F-4	1.089	.445
17-71	H-3		.053
5-73	H-53		2.100
32-80/3-79/48-74	ARN-84		.141
4-80	A-3		.128
23-79	A-7		5.529
52-72	P-3		3.153
30-75	P-3	.050	.150
9-77	A-6		.388
32-77	E-2		2.269
	TOTAL FY 80	1.494	18.140
4-73	H-46	.144	
23-79	A-7	9.746	
52-72	P-3	.466	
	TOTAL FY 81	10.356	

Figure IV-9. Sample of the ASO OSIP Execution Report

of funds is centrally managed by the budgeting personnel in the Comptroller's office. Requirements levied against these funds are authorized only for the aircraft for which the funds were intended. However, MOD FO funds are budgeted in the normal APN-6 replenishment account and are distributed to the respective branches in accordance with the budget execution plan. As depicted in Appendix D, these funds are delineated in the branch totals for annual obligation planning purposes. However, there is no mechanism within ASO to preclude the use of these funds in the procurement of normal replenishment spares. Additionally, from Appendix D it should be noted that in FY80 another line is included in the branch figures, MOD FO PAYBACK. This line indicates the amount of funds that are required to fund the use of MOD FO dollars for actual use in normal replenishment. The bottom line of this problem, in the author's opinion, is that you cannot continually rob Peter to pay Paul. Eventually, the requirement for MOD FO payback will exceed the annual obligation plan for normal APN-6 replenishment procurements. The ultimate loss in this situation is the operating unit that is trying to achieve a flight hour and readiness goal, but is unable to because the parts required to support the configuration aircraft have never been acquired. The expenditure of MOD FO funds for normal replenishment defeats the purpose of efforts that were described in Chapters II and III, the actual attainment of funds.

2. <u>Funding Provided Too Early with No Definitized Requirement</u>

While some funding is required in the early stages of the modification process after the ACCB approval to facilitate the contracting for the PRS, LLT items, and the interim support, the necessity for early funding of spare and repair parts does not exist. In the early stages of the modification program, in the first six months following the ACCB

approval of the ECP as described in Chapter III, definitized requirements as to what will be required to support the modification process will not have been formulated. Thus, the requirement for funding spares and repair parts is not needed at that point in time. Funding during year three of a five year modification program would be adequate to support the requirement to deliver spares by MSD, assuming that the time frames specified in Figure IV-8 are accurate. The practice of funding too early leads to the use of MOD FO funds for other than that for which they were appropriated, while funding too late would perpetuate the lack of support at MSD. No hard and fast rule can be set but judgement must be used in the administration and allotment of these funds.

3. Temporary Reprogramming Tends to Become Permanent

In conjunction with the early funding and lack of definitized requirements, both MOD I and MOD FO funds are eligible for reprogramming. According to interviews with ASO personnel, the manner in which this is accomplishment is usually after the fact. In the MOD I area, a requirement is generated that exceeds the appropriated amount for a particular aircraft. After checking with the other aircraft managers, authorization to spend funds authorized for a different aircraft is furnished to the requesting manager. After the fact, ASO notifies NAVAIR of the shift in funds and NAVAIR modifies the funds alloted to ASO. After this, it is incumbent on the losing manager to insure that his funds are reimbursed from the receiving manager at a later date [Ref. 23]. Unfortunately, as ASO admits, this seldom occurs [Ref. 24]. In the MOD FO area, the situation exists as stated previously; MOD FO funds are utilized to fund normal replenishment procurements and rarely are adequate funds available to affect MOD FO PAYBACK [Ref. 23].

4. Lack of Understanding by the IMS

In the last five years, the IMs who had been at ASO since shortly after World War II have been retiring at a rapid rate. To continue to provide the requisite service to the operating units, new IMs had to be recruited and trained. The lack of corporate knowledge has led to some of the problems involved in the modification programs. While the training provided to the new IMs is generally very good, it cannot provide 30 years worth of knowledge in 24 months. The training provided allows the IM to become proficient in this short period of time in the processing of normal supply demand reviews and automated procurements, but, in the author's opinion, does not allow them the time to become competent in the fine points of procurements to support a modification program. In view of the volume of dollars afforded the modification programs as a percentage of the total ASO budget, this is probably appropriate, however, the results of this are the continuation complaints from the PM/WSM organizatons on lack of support. The expenditure of modification funds is really no different from the expenditure of other funds at ASO. It only requires the ability to wait for the program to develop through the maintenance plan into stock numbered items and then procuring those items that are required for the level of support required to meet the operational objectives.

5. Inadequate Feedback

The feedback system that currently exists to inform NAVAIR and the PM/WSM offices of the implementing activities actions is insufficient to provide the data necessary for the PM/WSM to fully comprehend the scope of actions taken and to know where the funds that they fought for during the

OSIP/ECP process are going. Additionally, the ILS and CM personnel assigned to the PM/WSM organization must be kept informed of the actions taken so that they can coordinate their efforts in providing the best possible support to the operating units.

E. RECOMMENDATIONS TO IMPROVE THE MANAGEMENT OF MODIFICATION FUNDS

In light of the problems identified above, the following recommendations are submitted to improve the management of modification funds. The recommendations provided do not presume to make a determination of the limitations on management caused by the size of the staff and the cost of implementing some management control techniques.

1. Control Funds Within ASO

From the author's analysis, and from interviews with ASO and PM/WSM personnel, the first and by far the most important aspect of gaining control of the modification effort is to ensure the control of funds within ASO. Reprogramming of funds should not be allowed without NAVAIR concurrence prior to the authorization. By allowing NAVAIR to first concur on the reprogramming of MOD I funds, the annual allotments could be adjusted within NAVAIR to ensure that the payback of funds to the aircraft system that lost funds was effected. Of greater importance is the necessity to control the expenditure of MOD FO funds for normal replenishment procurements. Safeguards should be established within the computer programs of ASO to preclude the occurrence of this action. Continuation of this approach to meeting the normal replenishment of spares and repair parts will only further aggravate the source of complaints from the PM/WSM organizations and prevent the successful completion of modification efforts that are necessary to maintain the readiness posture of the Naval Air Forces. In addition to establishing

computer safeguards, MOD FO funds should be "fenced" to preclude the use of MOD FO funds authorized for one particular aircraft type on another. While this flexibility is desirable, the use of this practice tends to short change the manager who is less timely in the accomplishment of procurements related to the modification program.

To further promote the control of modification funds within ASO, it is recommended that a "central clearing house" be established for all procurements related to MOD I and MOD FO funds. While the delineation of funds available to the various branches is a step in the right direction, centralized control of the expenditure of funds within one office or desk should preclude the expenditure of funds on programs that are not authorized for expenditure of MOD I and MOD FO funds. Furthermore, by establishing such a position, fund shortages could be more readily addressed to AIR-412, rather than the current method of reprogramming in-house and then advising NAVAIR.

Control of funds within ASO is essential to the attainment of the objectives of all modification programs. Failure to gain control of the funds will perpetuate the current inefficient method by which modification funds are utilized in the support of modification programs essential to the continued readiness of the operating forces.

2. Reduce Front-End Loading of APN-6 MOD Funds

Current procedures for submission of OSIP/ECP requests require the delineation of all funds by fiscal year for the life of the program. For reasons unknown to the author or to those personnel in the PM/WSM organizations that were interviewed, heavy front-end funding of APN-6 modification funds is prevalent. This practice should be stopped and funds should be more heavily weighted to the latter years of the program when definitized requirements have been determined.

By placing APN-6 funds in the early years of the program, the officials preparing and approving OSIP/ECP requests are aggravating the control of funds problem within ASO. A continuation of this practice will lead to the continuation of internal reprogramming within ASO. Even with the establishment of tighter control within ASO, assignment of funds to ASO for which no definitized requirement exists will promote the inefficient utilization of resources. This will occur because of the ASO mandate to spend funds to the 98 percent level [Ref. 23].

A conscious effort must be made on the part of the PM/WSM staffs to ensure that the Cost and Funding Summary Chart filled out as part of the ECP format for the ACCB review, shows a realistic approach to the required funding schedule. Failure to provide a funding chart that realistically portrays the requirements of the program will perpetuate the inefficient assignment of APN-6 funds to the early stages of the modification program and the subsequent loss of control of funds at both NAVAIR and ASO.

3. Improve the Level of Knowledge

Nothing can replace the 30 years of corporate knowledge that leaves with the retirement of a senior IM. However, the level of knowledge and understanding of the modification process is essential for ASO to meet its requirements as a tasked activity in the program. The current method by which ASO's IMs achieve the necessary level of knowledge is through on-the-job-training after the initial two year training period. To improve the level of knowledge and capability of the current work force at ASO, several alternatives are possible. First, the ASO management could institute a training program in-house to increase the level of knowledge. Secondly, in-house briefings by the PM/WSM organizations could

be conducted in an attempt to educate the cognizant personnel on the requirements associated with the modificaton program. Third, ASO could increase the level of their attendance at ILSMT meetings to include more than just the cognizant branch head. By including IMs and technicians at the ILSMT, a greater depth of understanding and corporate ability could be developed. Fourth, outside contractors could be utilized to conduct training workshops in modification management, a service which is readily available, but seldom used.

The author feels that all of the alternatives listed above should be utilized to the maximum extent possible. In combination, the output from these alternatives could rapidly increase the level of knowledge and understanding of the ASO IMs and at the same time expose the PM/WSM personnel to the problems that the ASO personnel face in meeting the requirements for implementing a modification effort. Additionally, enlarged participation at the ILSMT meetings by ASO personnel would facilitate a broader depth of understanding, so that with turnover in personnel, the entire corporate knowledge is not lost. The concept of using outside contractors to help train the IMs is also attractive in that this approach would probably be the least biased to a particular aircraft type and could present the training in a perspective that is not available with in-house training or by PM/WSM briefings.

Failure to increase the level of knowledge and understanding of the IMs at ASO will perpetuate the current practices of ASO in the management of modification programs. It is essential to the attainment of the objectives of the modification program that the personnel tasked with implementing actions understand the ramifications of all actions taken or not taken.

4. Improve the Feedback Loop to Include the PM/WSM

The feedback loops that currently exist are insufficient to provide the PM/WSM with the necessary knowledge on what is happening within the modification program. The necessity of this information is important to the PM/WSM who wants to have full control of his/her program and be able to answer up to the operating units on the issues dealing with support of the aircraft.

To improve the feedback loop, the author recommends the utilization of the "central clearing house" concept suggested in the recommendation for control of funds within ASO. This office should be staffed with adequate personnel to allow the reporting of material procurements by aircraft type for the modification programs as well as expenditures. Separate reports should be submitted for each aircraft type on a monthly basis, should be addressed to all personnel who need or desire the information, and should detail the actual material for which acquisition has been contracted as well as the amount of funds involved in the expenditure. By so doing, the PM/WSM offices, as well as NAVAIR, could gain a better understanding of where the funds are going and for what purpose. This could also improve the checks and balances over the system as a whole, in that the procurement of spare and repair parts would be prominently displayed to the commands receiving the reports. Any disputes could be readily surfaced and procurements adjusted or realigned to what the PM/WSM felt was correct.

Neglecting to improve the feedback loop from ASO to PM/WSM organizations will result in the continuation of complaints from the PM/WSM offices of lack of support and lack of visibility as to how the funds appropriated by the OSIP/ECP procedure are being utilized. Notification

at an ILSMT six months after the fact that ASO procured the wrong item, or the wrong quantity, or that the required funds were spent elsewhere will not suffice. The PM/WSM organization need and deserve timely information that can be provided by a simple expansion of the feedback loop. This expansion is necessary to allow both ASO and the PM/WSM organizations to make the timely and correct decisions that are required to allow the modification process to flow according to schedule while maintaining fiscal and logistical control in an efficient manner.

F. SUMMARY

In this chapter, a brief review of the organizational structure and the controls over the management of modification funds was presented. The problems associated with these organizations and controls and possible recommendations for improvement were also presented.

NAVAIR, as the administering agent for modification funds associated with the aviation community, centers its management control within three divisions; Plans and Programs (AIR-01), Logistics and Fleet Support (AIR-04), and the Comptroller (AIR-08). The interface of these three divisions is important to the successful completion of any modification program.

AIR-412, the administrator for modification funds for spare and repair parts (APN-6) is responsible for the allotment of funds to ASO as the implementing activity. As such, AIR-412 is tasked to coordinate the efforts within NAVAIR to insure that the flow of funds to ASO is adequate to complete the assigned task, and is also responsible for the disemination of information on ASO prograss to the NAVAIR command.

ASO, as the implementing activity for procurement of spare and repair parts to support the modification effort, must translate the dollars

provided by NAVAIR into the material requirements that meet the objective of the modification program. In so doing, they must be able to demonstrate that the spare and repair parts procured are those that are necessary for the program. Additionally, this must be done on a timely basis within the resource constraints provided by higher authority.

Because of the necessity to attain the objectives of the various modification programs that are on-going at any particular point in time, problems have developed in the achievement of adequate spare and repair part support for all programs. The result has been a growth in the number of complaints for support from both the operating units as well as the PM/WSM organizations. The subjects of these complaints are:

- Inadequate control of funds within ASO
- Funding provided too early with no definitized requirement
- Temporary reprogramming of funds tends to become permanant
- Lack of understanding by the IMs at ASO
- Inadequate feedback of information to PM/WSM.

The author provided recommendations which were felt to be necessary to improve the management control of modification funds. These recommendations are:

- Control funds more efficiently at ASO
- Reduce front-end funding of APN-6 modification funds
- Increase the level of knowledge and understanding of the IMs
- Expand and improve the feedback of information.

Chapter V will tie together the presentation of the previous chapters into a summary of the modification process and what it is supposed to do for the USN. From this, the author will present general conclusions on the process and attempt to predict what the future of modification management will be.

V. SUMMARY AND CONCLUSIONS

A. SUMMARY

Chapter I begins by introducing the reader to the subject of modification management in the aviation community of the U.S. Navy (USN). Additionally, it went on to point out the concern of high levels of USN management in the readiness of the aviation forces today, and that the only way that the USN could maintain the correct readiness posture in the forseeable future was through the modification process. The author stated, and believes, that the improvement of modification management is essential to the attainment of the readiness posture that is necessary for the USN to achieve the desired level of viable weapon systems. The objectives were stated as:

1. To provide recommendations for improved management control over the limited resources assigned to the modification effort, and
2. To provide a guide for personnel tasked to administer modification funds.

The author feels these objectives have been met by providing the organizational background for the promotion of modification requirements in Chapter II, the concept of the Operational Safety Improvement (OSIP) and Engineering Change Proposal (ECP) programs in the modification effort in Chapter III and the discussion of management of funds and recommendations for improvement in Chapter IV.

The motivation for this thesis for the author was the many agonizing hours spent trying to learn about the inner workings of the modification process while assigned to two different aircraft projects. The data

presented is the best possible correlation of the author's personal background, experience, and beliefs with those who have volunteered much of their time to discuss the subject. The insights and guidance provided by those actually assigned to current aircraft program offices and to modification projects made the author better able to fully understand the total requirements of the process.

Modification of aircraft will remain an on-going process as long as the USN continues to fly airplanes. The criticality of the effort to maintain a viable Naval Air Force will remain a subject of high level management concern as long as the requirement for aircraft exceeds the funding provided. To make up for this shortage of funds, the only feasible solution is the continued modification of aircraft.

The concluding paragraphs will summarize the general conclusions of the author. These include recommendations that supplement those made in Chapter IV.

B. GENERAL CONCLUSIONS

1. There is a Need for Increased Emphasis in the Area of Modification Management

The continuing problems encountered in the area of modification management, have led the author to believe that more emphasis should be placed on the processes that support the program. Additionally, the need for increasing the projected operating lives of current inventory aircraft to supplant the shortage experienced in the past, as well as the forseeable future, for funds to procure new aircraft leads to the requirement to increase the emphasis on modification management.

While the need for this increased emphasis has been espoused by many Program Manager (PM)/Weapon Systems Manager (WSM) organizations,

little has been done in the past to correct the inefficiences of the system. A continuation of current practices will result in the perpetuation of cost, schedule, and control slippages.

2. Cooperation is Essential to the Success of the Modification Program

To successfully complete a modification program, cooperation between all concerned parties is essential. This is required so that the appropriate trade-offs between technical advancement and supportability, reliability and maintainability, and cost and schedule can be made. This requires the close interface and cooperation between the various disciplines of logistics support, engineering support, research and development, and the PM/WSM offices. A failure to achieve the required level of cooperation will ultimately lead to the unsuccessful modification of aircraft and the unsupportability of those that are modified.

It is the author's opinion that to achieve the necessary degree of cooperation in the modification effort, early identification of all concerned parties should be stressed. By involving the logistics personnel at the beginning of the modification process, earlier definitization of requirements could be achieved, and funds appropriated for the modification program could be expended in a timely and logical manner. If nothing else, this should improve the climate that exists in ASO in regards to the expenditure of MOD funds on programs for other than which they were appropriated.

3. Modification Follow-on (MOD FO) Funds Should be Funded Separately from Normal Replenishment Accounts

The funding of MOD FO and normal replishment together in the same account has led to the expenditure of MOD funds to accomplish normal replenishment of spares lost through attrition and age. A continuation of

this practice will lead to the perpetuation of the shortage of MOD FO funds to procure the necessary spare and repair parts to meet the modification program objectives.

To achieve the desired separation, the author recommends that the funds for MOD FO be "fenced" when received from NAVAIR. The fencing of the funds would preclude the shifting of funds from the MOD FO account to the replensihment account, but would still allow the flexibility to shift funds within the MOD account to meet the timing differences encountered during the receipt and expenditure processing. As long as the total accountability is maintained within the MOD FO account, the shortage of MOD funds encountered under today's practice should not present a problem.

4. There is a Need for Increased Modification Management Educational Efforts

As stated in the previous chapter, improved modification management cound be achieved by better educating those involved in the process. Several methods are recommended to further the education of those involved:

a. In-house training sessions by those who know and understand the process and know how to make it work,

b. Briefings by the PM/WSM organization to facilitate the cooperation, coordination, and communication of the modification program,

c. Greater involvement in the Integrated Logistic Support Management Team (ILSMT) meetings by all participating activities, and

d. Utilization of outside contractors to facilitate the growth of knowledge necessary to permit the successful completion of modification efforts.

In brief, all of these efforts should be emphasized so as to preclude the loss of corporate knowledge and to enhance the stature and viability of modification management.

5. <u>There is a Need for Increased Awareness of the Modification Programs Within the USN</u>

Currently, the only people who know and understand the modification management programs on-going in the USN are those that are intimately involved in them, or those who are required to testify before Congress about them. It is the author's opinion that the awareness of these programs should be enhanced so that others could become more aware of them and possible provide support for the program. The normal taxpayer would be interested in knowing where the billions assigned to the Department of Defense (DOD) are going. However, the only thing that is normally presented to the taxpayer are the reports that show that this fighter costs $25 million per copy or that this support aircraft cost $46 million per copy. Nothing is ever published that shows that the USN saved the taxpayer $2 billion by modifying a certain aircraft rather than procuring a new line of hardware. The author believes that the support this type of effort could generate would surely enhance the posture of the modification management programs and promote the attainment of the programs in a more efficient manner.

6. <u>There is a Need for Additional Study in the Area of Modification Management</u>

In the author's research, there was very little to be found in the area of written research relating to the area of modification management. Several areas are open to additional research.

a. Research is necessary in the area of comparing the actual expenditures made at the various logistics activities tasked with implementing the ECP against the expenditures that were planned by the PM/WSM and accounting for any differences.

b. Further study is needed in the area of personnel training and management of people involved in the modification process to promote the development of skills needed to work in the modification management field.

c. Additional study is necessary in the area of requirements determination by the PM/WSM organizations to insure that the requirements developed by these organizations are truly those required for the modification effort and not just "nice to have" items. This is most important in times of austere budget funding.

d. Additional research should be attempted in the area of formulating ASO's budget to correctly reflect the actual MOD FO requirement by aircraft type. The current structure does not attempt to provide this information which is a necessity for the IM to know that the MOD funds are actually budgeted for the equipment or system he is tasked to support.

C. CONCLUSION

This thesis has provided an overview of the modification mangement process that exists for the aviation community. Additionally, it can be used as a guide for the general process that exists in the USN and lead the reader to more in-depth personal study.

The necessity for modification management has never been more prevalent than it is in today's Navy. The efficient management of the process is dependent on the people who serve in the positions that project and guide the implementation of the modification programs. The main priority for everyone involved is to talk to each other and derive the best possible plan by which the objective of the program can be met. As Vice Admiral Forrest S. Petersen, USN, former Commander, Naval Air Systems Command stated:

"... There are no easy solutions to these challenges. I am convinced that these challenging management tasks will not be solved by more detailed procedures and micro-management but by better communication (both formal and informal) among professionals." [Ref. 25:107].

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APPENDIX A

NAVAIR NOTICE 4000; OPERATIONAL AND SAFETY IMPROVEMENT PROGRAM ITEMS FOR THE AIRCRAFT MODIFICATION BUDGET FOR FISCAL YEAR 1983

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
WASHINGTON, D.C. 20361

IN REPLY REFER TO

Canc frp: Dec '81
NAVAIRNOTE 4000
AIR-102B:MJP
27 Aug 1980

NAVAIR NOTICE 4000

From: Commander, Naval Air Systems Command

Subj: Operational and Safety Improvement Program (OSIP) Items for the Aircraft Modification Budget for Fiscal Year 1983; submission of (Report Symbol NAVAIR 4000-10)

Ref: (a) NAVAIRINST 4000.3A of 9 Feb 1976

Encl: (1) OSIP Justification Formats
(2) Currently budgeted FY 1983 Programs

1. Purpose. This notice requests submission of Operational and Safety Improvement Program (OSIP) items for inclusion in the aircraft modification budget for fiscal year 1983 (FY 83).

2. Cancellation. NAVAIR Notice 4000 of 14 September 1979 is superseded.

3. Background. OSIP items are submitted to the Chief of Naval Operations (OP-506) each year for planning, programming, and budgeting for the modification and modernization of in-service aircraft weapon systems and power plants. Naval Air Systems Command policy and procedures for submission of OSIP items are established by reference (a).

4. Policy and Planning Guidance. The following policy and planning guidance has been provided by the Chief of Naval Operations (CNO (OP-50)):

a. The planning base for all proposed aircraft modification programs and funding alternatives to be considered during tentative program objectives memorandum (TPOM) 83 will be the October FYDP update as amended by decision package set (DPS) actions. Appropriate offices will be notified when DPS actions are promulgated.

b. Costs for all programs must be submitted in base FY 82 dollars for FY 83 and subsequent years.

c. Modification programs shall be planned for completion within a maximum of five years from initial installation year.

d. The quantities of aircraft to be modified should be within the active aircraft inventory as reflected by Exhibit A-II, U.S. Navy Aircraft Inventory (available in AIR-102), for the year that kits will first be available for installation.

e. Aircraft modifications scheduled for in-house installation (NAVAIREWORKFAC) should reflect maximum installations during standard depot level maintenance (SDLM) utilizing the schedules contained in Exhibit A-VII, U.S. Navy Aircraft Estimated Reworks (available in AIR-102). However, due to the increasing interval between SDLM's and the numbers of aircraft on extended tours, the most economical combination of field teams and drive-in mod programs should be planned to augment SDLM installation where necessary to ensure completion within the five-year limitation.

f. Component modification programs must be structured to conform to the rework schedule for that component. If more components are required for the modification schedule than will be available by the rework schedule, the source of those additional components must be identified. In programs which require a component change(s) as well as an airframe change, the component change(s) must be listed separately.

g. All new programs must be well defined and capable of standing alone. In cases where common equipment (e.g., AN/ARC-159 radio) is being put in more than one type/model of aircraft, a separate program must be established for each aircraft as shown by P-1 line items in the budget.

h. Increased emphasis is being placed on elimination of concurrency. When approval for service use (ASU) is necessary, it must be received no later than second quarter FY 1983 to be considered eligible for FY 1983 APN-5 funds.

i. Program Coordinators in OP-506 will specify by speedletter to the PMA/APC/WSM which programs are to be submitted to OPNAV for TPOM-83. After submission of these programs, other programs may also be proposed via the PMA/APC/WSM by separate correspondence for OPNAV consideration.

5. Budget guidance. The following budget guidance is provided by the Comptroller (AIR-805):

a. New programs are to be structured on a fully funded basis (one complete year at a time).

b. All installation costs, whether contractor or in-house, are to be budgeted in the year of installation and are chargeable to O&MN.

c. Service Life Extension Program (SLEP) studies and analytical rework studies for out-of-production aircraft modifications are chargeable to O&MN if the effort involves extending the useful military life within the current performance envelope, and to RDT&EN if the effort involves redesign of an item to increase the current performance envelope.

d. Contractor engineering technical services (CETS) are chargeable to APN-5 for contractor-to-contractor services only. CETS for contractor-to-Navy effort (support of the Fleet) are chargeable to O&MN.

e. The initial Integrated Logistic Support (ILS) Plan is funded under APN-5.

f. Standard depot level maintenance (SDLM) costs are chargeable to O&MN.

g. In-house test and contractor tests are to be shown on separate line items in the budget back-up and are not to be included in the nonrecurring line.

h. Training material, trainer modification, ground support equipment, and publications are funded by APN-5 when they are peculiar to the modification program. When an item is being procured for production aircraft as well as retrofit, the production program (APN-1 to 4) funds this support. Factory training is chargeable to O&MN.

i. A statement must be made under Development Status about PASU/ASU. If it is required, give estimated date for receipt of PASU/ASU, number of TEMP and P.E. number of RDT&E program, if applicable. If it is not required, state "No ASU required."

6. Action. The following action is assigned:

a. Upon receipt of speedletters from OPNAV (OP-506), Project Managers/Coordinators and Weapon System Managers will have detailed OSIP's prepared in the format of enclosure (1) (using legal size paper like the current budget submission).

b. All AIR-05 functional division inputs will be coordinated by AIR-5122B.

c. All AIR-04 functional division inputs will be coordinated by AIR-4105C7.

d. Two advance copies of all OSIP's will be forwarded to AIR-102 as working papers as soon as possible but not later than 9 October 1980.

e. AIR-102 will initiate program reviews with the PMA/APC/WSM, cognizant functional area personnel, and AIR-805 prior to submission of the proposed OSIP items to OPNAV.

f. On-going programs identified in enclosure (2) already in the FY 82 budget, will be updated separately as requested by AIR-102.

g. Deadline for submission to OPNAV is 27 October 1980.

7. Report. Report Symbol NAVAIR 4000-10 applies to the reporting requirement in this notice.

8. Cancellation Contingency. When superseded by a revision.

R. W. MCFERREN
By direction

Distribution: (FKA1A (established quantity), Others 5 copies each)
FKA1A (Deputy Commander; Assistant Commanders; Designated Project Managers and Project Coordinators; Office and Division Directors);
FKR1B (Weapon System Management Office (Code 05), Jacksonville, FL 32212; Weapon System Management Office (Code 05), Norfolk, VA 23510; Weapon System Management Office (Code 05), North Island, San Diego, CA 92135; Weapon System Management Office (Code 05), Alameda, CA 94501; Weapon System Management Office (Code 05), Pensacola, FL 32508)
Copy to:
A4A; FKA1A (AIR-9701 (10 copies), AIR-9701A (40 copies), AIR-102 (25 copies), AIR-08, AIR-805, AIR-00X, AIR-59, AIR-512, AIR-5122B, AIR-410, AIR-4105C7, AIR-4123); FKR7E
Stocked at NAVAIR HQ (AIR-9701A)

APPENDIX B

MISSION AND FUNCTION OF THE AVIATION PLANS AND REQUIREMENTS DIVISION

OP-50
AVIATION PLANS AND REQUIREMENTS DIVISION

Mission: To implement the responsibilities of DCNO (Air Warfare) pertaining to the preparation of plans, tactical doctrine and the definition of requirements to provide for naval aviation forces (including the Naval Air Reserve) and their logistic support. Included is the preparation of budgets and their sponsorship and coordination with pertinent offices to provide for integration into the overall Navy program planning system.

Functions:

1. Prepares plans within the framework of approved policies, to provide required aviation forces and their support. (OP-508)

2. Develops and formulates requirements for naval aircraft, naval aviation weapons, aircraft carriers, specified aviation type ships and associated aeronautical equipment, including their material readiness, to fulfill Navy objectives and to support warfare plans and programs. (Shipboard equipment and systems for control and navigation of aircraft in approach and landing phases of operations at sea are excluded from this functional responsibility). (OP-506)

3. Prepares requirements for aviation programs and coordinates other requirements pertaining to the appropriations and budget activities sponsored by the DCNO (Air Warfare) and supports these requirements before the various military and civilian budgetary reviewing agencies. (OP-501/506/508)

4. Provides technical cognizance for the conduct of OPNAV review of aircraft tactical manuals and takes the necessary action to keep them current. (OP-506)

5. Establishes the operational characteristics of air weapons systems required to meet approved plans. Initiates changes required by changes in plans or in probable threats. Initiates action to upgrade or extend operational capabilities of existing air weapons systems. (OP-506)

6. Provides program coordination, as defined in the Navy Programming Manual, for all air programs assigned to DCNO (Air Warfare) for sponsorship. (OP-506)

7. Provides liaison with the Director, RDT&E on matters affecting aviation programs. (OP-506)

8. Determines air launched nuclear weapons requirements and monitors readiness of naval air units to maintain and deliver nuclear weapons. (OP-506)

9. Provides liaison with the Office of the DCNO (Logistics) on matters affecting air launched weapons expenditures. (OP-506)

10. Provides liaison for aircraft engine configuration requirements in support of DCNO (Air Warfare) responsibilities in the pollution abatement program. (OP-506)

11. Coordinates with other offices for integration of aviation plans, programs and requirements into overall Navy plans, programs and requirements. (OP-508)

12. Coordinates with other offices in the formulation of joint, international and Navy plans and policy matters affecting naval aviation. (OP-508)

13. Advises the DCNO (Air Warfare) on the most effective uses of aviation forces. (OP-508)

14. Monitors assigned aviation plans and requirements and coordiates with OP-59 in order to ensure their timely and complete fulfillment. (OP-506/508)

15. Advises the DCNO (Air Warfare) on policy matters affecting the fulfillment of his mission, and prepares positions on policy matters affecting naval aviation. (OP-501/506/508)

16. Assista in the developmnt of plans and requirements for aircraft and related material for the Military Assistance Program. (OP-508/506)

17. Conducts a program of staff studies and analyses necessary to provide the foundation for naval aviation plans and programs. (OP-501/506/509)

18. Develops and coordinates the formulation of requirements for orderly and effective mobilization planning for naval aviation, including ships, aircraft, facilities, and associated equipments. (OP-508)

APPENDIX C

SAMPLE FORMATS FOR ENGINEERING CHANGE PROPOSAL SUBMISSIONS FROM NAVAIR INSTRUCTION 4130.1A

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
WASHINGTON, D.C. 20361

IN REPLY REFER TO
5302F3/KL
Ser 7.2534

SAMPLE REQUEST FOR ENGINEERING CHANGE PROPOSAL

From: Commander, Naval Air Systems Command
To: Commander, Naval Aviation Logistics Center, Code 310
Patuxent River, Maryland 20670

Subj: Model F-14A, Arresting Gear Stinger Shank Trunnion Stop, Request for ECP

Ref: (a) NAVAIRWORKFAC msg 291541Z Oct 79

1. Reference (a) engineering investigation of an F-14 stinger shank failure during arrested landing attributed crack origins to damage caused by stinger shank lugs impacting the trunnion stops. Damage occurs due to jamming of the arresting hook during rollback following arrestment. Approximately twenty stinger shanks, including the failed shank of reference (a), have sustained this type of damage and have been subjected to blending of the damage lug area, magnetic particle NDI, and pull testing prior to reissue.

2. Discussions between NAVAIREWORKFAC, Norfolk, GAC, and NAVAIR to resolve the problem of shank and trunnion stop impact damage have been principally directed towards redesign of the trunnion stops. The latter involves replacement of the current integral stops with detachable sacrifical stops which move the impact area away from the critical lug area, improve load capacity, and provide for lower hardness stop material to further preclude shank or trunnion damage.

3. It is requested that NAVAVNLOGCEN assign NAVAIREWORKFAC, Norfolk to submit to NAVAIR by 15 January 1980 an Engineering Change Proposal (ECP) governing the redesigned stinger shank trunnion stops for both retrofit and production aircraft. The ECP should carry an urgent priority in order to preclude further damage to stinger shanks which affects both fleet readiness and safety of flight.

4. This ECP is to be sponsored by CAPT R. D. Johnson, PMA-241, autovon 222-8283 with the following cognizant engineers: Mr. M. Dubberly, Code AIR-5302F/Mr. K. Leikach, Code AIR-5302F3, autovon 222-3593 (NAVAIR) and Code 31310, autovon 690-8411 (NAVAIREWORKFAC, Norfolk).

5. AIR-05 NESO board member concurs.

NOTE: Requests for ECPs pertaining to aircraft electrical or electronic systems/equipment used to process classified information shall cite applicable test criteria when a TEMPEST impact is identified. (TEMPEST refers to control of compromising emanations and the suppression thereof).

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
WASHINGTON, D C 20361

IN REPLY REFER TO
NAVAIRINST 4130.1A

ECP COVER SHEET

From: CCB Chairman
To: ______________________

Instructions for Processing Class I Engineering Change Proposals and Requests for Major/Critical Deviations or Waivers

ECP/RFDW Number: ______________________

Contractor/Naval Activity: ______________________

A. Immediately upon receipt of the attached ECP/RFDW, the project manager/coordinator or cognizant AIR-05 Division Director when no PMA/PC exists, is directed to:

1. Conduct a preliminary review with codes affected to determine if the ECP/RFDW is required, acceptable, and fundable where applicable.

a. If GO, establish a CCB Action Deadline Date and document same by a decision memorandum to codes affected, Info: AIR-0104. (See EXHIBIT IV-D of NAVAIRINST 4130.1A for sample decision memorandum and distribution.)

NOTE: Target for decision and implementation:

24 hours for EMERGENCY ECPs
15 days for URGENT ECPs
45 days for ROUTINE ECPs

Requests for deviations or waivers shall be processed according to need/circumstances but normally within 45 days.

Direct appropriate code to initiate CCB Change Request/Directive, NAVAIR Form 13050/2, in accordance with EXHIBIT IV-G of NAVAIRINST 4130.1A.

b. If NO GO, direct release of correspondence to the ECP/RFDW originator, indicating disapproval, Info: AIR-0104. (See EXHIBITS IV-E and IV-F of NAVAIRINST 4130.1A for sample ECP disapproval letter.)

c. If additional ECP information is required, direct release of correspondence to ECP originator.

NOTE: Codes desiring additional ECP information shall draft correspondence for release by code that requested the original ECP, with copy to AIR-0104.

Upon receipt of required information, action shall be taken per a. above.

B. Coordinated CCB Change Requests/Directives must be delivered to AIR-0104 before 1100 hours on the Friday preceding the CCB Action Deadline Date, to allow for reproduction and distribution prior to CCB meetings.

CHARLES A. PHILLIPS
CAPT., USN

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
WASHINGTON, D C 20361

IN REPLY REFER TO
NAVAIRINST 4130.1A

SAMPLE AIRFRAME ECP AND GFE COMPONENTS ECP DISAPPROVAL LETTER

From: Commander, Naval Air Systems Command
To: Blank Aircraft Corporation (Address)
Via: Naval Plant Representative

Subj: Contracts N00019-79-C-0550 and N00019-79-C-0086, F-112 Aircraft; Engineering Change Proposal GR-F-112-9999, "Fuel Quantity System Junction Boxes, Installation of"

Ref: (a) BLK ltr w/NAVPRO endorsement dated 1 May 1979

1. Engineering Change Proposal GR-F-112-9999, "Fuel Quantity System Junction Boxes, Installation of," submitted as enclosure (1) reference (a) has been considered by the Naval Air Systems Command and is hereby disapproved. The improved capability or utility proffered, when weighed against the requirement and/or the service status of the aircraft, does not justify the cost.

2. The contractor's initiative exhibited and efforts expended in preparing the change proposal are appreciated.

SIGNATURE
(Requesting/Cognizant NAVAIR code)
By direction

Copy to
Project Manager
Assistant Project Manager/Project Officer/
Project Coordinator
Material Acquisition (ESA-20__)
Cognizant Engineer (AIR-512/533/536)
CCB Secretariat (AIR-01D4)
AIR-04 Change Control (AIR-41050)
(Other Codes Affected, e.g., ASO, NAVAIRTECHSERVFAC, NAVAVNLOGCEN, etc.)

NOTE: List "Copy to" codes on Command copies only.

(For GFE components and other commodity areas, furnish copies to agencies concerned.)

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
WASHINGTON, D C. 20361

IN REPLY REFER TO
NAVAIRINST 4130.1A

SAMPLE ECP DISAPPROVAL LETTER FOR USE WHEN DEFECT IS INVOLVED FOR AIRFRAME GFE COMPONENTS

From: Contracting Officer, Naval Air Systems Command
To: Blank Corporation (Address)
Via: Naval Plant Representative/NAVPRO/AFPRO-DCAS, etc.
(Address if different than above)

Subj: Contracts N00019-79-C-0550 and N00019-79-C-0086, Model F-112, -A and -B Aircraft; ECP No. EV-F-112-123, "Deletion of Rudder Tab"

Ref: (a) GRIT let CTR. 1265 of 15 May 1979 with NAVPRO Endorsement of 18 May 1979

1. The subject Engineering Change Proposal (ECP), submitted by reference (a), is considered to be required to correct a failure to conform to contract requirements.

2. No objection is interposed to the subject ECP from an engineering standpoint. However, it is not desired that the correction here involved be accomplished in the articles delivered, or to be delivered, under the subject contract(s).

3. Accordingly, the following action is hereby requested.

a. Undelivered Articles. If acceptable to the contractor, the Government will waive its rights to require correction, subject to negotiation of an equitable reduction (contract price*), (fixed fee**), (target cost and target fee***). The contractor is requested to submit, within ninety (90) days, a proposal for such adjustment.

b. Delivered Articles. Pursuant to the terms and conditions of the subject contract(s), the contractor is hereby notified of the Government's determination not to require correction. The contractor shall submit, within ninety (90) days, a proposal for an equitable reduction in (contract price*), (fixed fee**), (target cost and target fee***).

SIGNATURE
Contracting Officer
Naval Air Systems Command

UNCLASSIFIED

(SEE EXHIBIT IV-G, NAVAIRINST 4130.1A)

Grumman Aerospace Corporation | ECP-GR-E2C-281 | 801-119

APS-120/125 Radar WRA-37 Mod to Prevent Radar Reverts, (Model E-2C Aircraft)

Lt. S.F.Mercurio | 54912D | 20798 | 23 Oct 79 | Corr. of Deficiency - Contr. Resp.

(a) GAC ltr CTB/979-5769 of 5 Sept.1979 with NAVPRO Bethpage 1st End Ser EN-1712 of 17 Sept.79.

Contract Numbers	Articles Affected	Total on Contract	Production	Retrofit
N00019-71-C-0450	E-2C	11	0	10
72-C-0367	"	8	0	7
74-C-0040	"	9	0	9
75-C-0326	"	6	0	6
75-C-0345	"	6	0	6
76-C-0016	"	7	0	7
Cont. on Block 27				45

Mandatory Considerations	No	Yes	Action Required
a.	X		
b.		X	AIR-552
c.	X		AIR-533/552
d.	X		
e.		X	

Production effectivity: [X] Estimated — 161228 A-64

Priority for production: B [X]

Status of change: [X] Not started

Retrofit installation: Int — 10

Technical directive category: [X] Routine

Weight and performance guarantees affected: [X] No — Negligible — Negligible — None

Cost savings: [X] No

Type of technical directive: [X] AVC

NONE

21 MONTHS AFTER AUTHORIZATION TO PROCESS

77-C-0022	E-2C	6	0	6
78-C-0020	"	6	0	6
	"			57

PROBLEM: The radar occasionally reverts from "STANDBY" to "ON" upon initial turn-on. This is caused by transients that activate an overload circuit.

SOLUTION: Addition of an RC network as proposed by this ECP will eliminate the transients.

SAMPLE

AIR-21412: IAW Ref (a) issue OCDN for 57 kits for modification of E-2C aircraft, technical directive, non-recurring engineering and associated drawings.

AIR-410182: Issue call letter. Order 20 kits for modification of spares.

AIR-552: Order ground support equipment changes.

AIR-4113C: Order training/trainer modifications.

Proposed action: [X] DWG — [X] Field Office — NAVPRO Bethpage — [X] Prototype in production article — [X] Contractor — [X] Provide

6 E-2C

51-E-2C

UNCLASSIFIED

UNCLASSIFIED

801-119

31 DEC 79

ACT KEY	ITEM	PRODUCTION: NAVY	PRODUCTION	RETROFIT: NAVY	RETROFIT	TOTAL	FUNDS: PRODUCTION	FUNDS: RETROFIT
A	Eng. Change Dsn. & Test	NICP						
B	Drawings	NICP						
C	Tech. Directive			NICP				
D	Tech. Directive Verification							
E	Tech. Directive Prep and Dist.							
F	Supply Data			2200		2200		ASO
G	[illegible]			NICP				
H	[illegible]							
I	Training	4430				4430	PMA-231	
J	Trainers	13,240				13240	PMA-231	
K	[illegible]			8000		8000		Air-4123
L	[illegible]							
M	New Spares							
N	Repair Parts							
O	Publications	19940				19940	PMA-231	
P	Publications Prep and Dist							
Q	[illegible]							
R	Interim Support							
S	Ground Support Equipment	6,490				6490	PMA-231	
T	Gov't Furnished Equipment							
U								
V								
W								

SAMPLE

CODE	CONCURRENCES	CCB MEMBERS	APPROVED	DISAPPROVED
549317	[signature]			
5123	[signature]			
55211	[signature]			
410182	Criswell H. Emms			
4105D	R. L. Logdon			
PMA-231 A	[signature]			

IMPLEMENTING ACTIONS

ACTION		ACTION KEYS	ACTION CODE	ACTION DATE	OTHER INFORMATION
Change Order					
Order for Correction of Defects		A,A,C,C	21412		
		C,K	410182		
Technical Directive					
	CAC/ASO	F	ASO		
4133	CAC	I,J	4133		
		O	NATSF		
		S	534		

UNCLASSIFIED

CCB CHANGE REQUEST SUPPLEMENT
GOVERNMENT-FURNISHED EQUIPMENT (GFE), ACTIVE CONTRACTS
NAVAIR FORM 13050/2A (REV. 12-77)

(Prepare this form for Avionics, Instruments, Armament, and like component changes, and for engines when applicable, and attach to CCB Change Request.)

UNCLASSIFIED

CCB NO. 801-119

SUBJECT OF CHANGE AND CLASSIFICATION OF SUBJECT

APS-120/125 Radar, WRA 37 Modification

The originator of the Change Request shall be responsible for the accuracy of the information provided and shall obtain the concurrence of the aircraft modification coordinator prior to submission to the cognizant component coordinator for review and placement on the Component Change Control Board (CCCB) agenda.

EFFECT ON CURRENT ACTIVE CONTRACTS
(Breakdown information, as appropriate, between NAVAIR, Air Force, and other users.)

GFE CONTRACT NUMBER	ITEM NO.	AIRCRAFT (Models)	FISCAL YEAR	GFE QUANTITY	PROGRAM AMOUNT	TOTAL PRICE	FUNDS RESERVED (Project Mgr/Coord. Signature)
				RETROFIT			
N19-79-C-0345	1	E-2C					
		FY 79					
		5 Kits				$ 05000	
				Non-recurring		15000	
				Technical Dir.		10000	
				Total		$ 30000	/s/ W. Wagner PMA 231
						Total would be entered in Block 30 of 13050/2.	

SAMPLE

NOTE: Sample only. GFE was not Req'd for ACCB 801-119

SIGNATURE OF PREPARER	CODE	TELEPHONE NO.	DATE

PREVIOUS ISSUES OF THIS FORM ARE OBSOLETE

UNCLASSIFIED

CCB CHANGE REQUEST SUPPLEMENT
GOVERNMENT-FURNISHED EQUIPMENT (GFE), COMPLETED CONTRACTS
NAVAIR FORM 13050/20 (REV. 11-77)
(Prepare this form for Avionics, Instruments, Armament and like component changes, except engines, and attach to CCB Change Request)

UNCLASSIFIED

CCB NO. 801-119

SUBJECT OF CHANGE AND CLASSIFICATION OF SUBJECT

APS-120/125 Radar, WRA 37 Modification

The originator of the Change Request shall be responsible for the accuracy of the information provided and shall obtain the concurrence of the aircraft modification coordinator prior to submission to the cognizant component coordinator for review and placement on the Component Change Control Board (CCCB) agenda.

EFFECT ON MODIFICATION PROGRAM (Completed contracts; i.e., all articles delivered)
(Breakdown information, as appropriate, between NAVAIR, Air Force, and other users)

GFE CONTRACT NUMBER	ITEM NO.	QUANTITY: EQUIP INSTALLED BY FY A/C BUY	QUANTITY: SPARES	QUANTITY: TRAINING	QUANTITY: OTHER	UNIT PRICE	FUNDS RESERVED (Modification Coordinator's Signature)
			<u>RETROFIT</u>				
N19-75-C-0345	1	E-2C FY 75 5 Kits				$5000	/s/ S. Savas AIR-102
			<u>SPARES</u>				
N19-75-C-0345	3		5 Kits			5000	/s/ W. F. Brown AIR-412
			<u>TRAINERS</u>				
N19-75-C-0345	5			2 Kits		2000	/s/ L. Barks AIR-413
					Total	$ 12000	

Total would be entered in Block 30 of 13050/2

NOTE: Sample only. GFE Mod was not required for this ACCB.

SAMPLE

SIGNATURE OF PREPARER	CODE	TELEPHONE NO.	DATE

PREVIOUS ISSUES OF THIS FORM ARE OBSOLETE

UNCLASSIFIED

COST AND FUNDING SUMMARY

☐ ATTRITION
☒ PRODUCTION
☒ RETROFIT

ECP/RAMEC No. CR-E2C-281
ECP/RAMEC Originator Grumman Aerospace Corp.
ECP/RAMEC Sponsor AIR-59-31

Logistics Manager AIR-4101B2
Equipment WRA-37 Mod (Radar Revert)
OSIP No. N/A

CCB No 801-119
TD No. AVC
TD Category Routine

ELEMENT	LEAD TIME	MAN HOURS	QTY BY FY 80	81	82	TASKED ACTIVITY	IMPL ACTY (NAVAIR CODE)	TYPE FUNDING	1ST YEAR (FY 80) FUNDING COST	04 FUNDING SIGN OFF	2ND YEAR (FY 81) FUNDING COST	04 FUNDING SIGN OFF	3RD YEAR (FY 82) FUNDING COST	04 FUNDING SIGN OFF
	21	10												
1 RETROFIT – NON RECURRING														
a TECH DIR PREP						GAC	AIR-02	NICP	NICP					
b TECH DIR VERIFICATION						Fleet	NALC	N/A	N/A					
c TECH DIR PRINT & DISTR						NPPSO	NATSF	APN-1	350					
d DRAWINGS						Included	in Production	Non-recurring						
e SUPPLY DATA						GAC	ASO	APN-6	2,200	TO BE PROVIDED	WITHIN	CURRENT ASO DCN/S	ICR AUTHORIZATION	
f TOOLING						N/A								
2 RETROFIT – RECURRING														
a TOOL KITS						N/A								
b KITS FOR BASIC EQUIPMENT			57			GAC	AIR-02	NICP	NICP					
c MOD OF BASIC EQUIPMENT					57	AIMD	TD	N/A	N/A					
3 GFE						N/A								
4 LOGISTICS SUPPORT														
a TRAINING						GAC	AIR-413	APN-1	4,430					
b KITS FOR NAMTs			1			GAC	AIR-413	APN-1	13,240					
c MOD OF NAMTs				1		DET 1026	TD	N/A	N/A					
d KITS FOR WST/OT						N/A								
e MOD OF WST/OT						N/A								
f KITS FOR SPARES			20			GAC	AIR-410	APN-6	8,000					
g MOD OF SPARES					20	CLAMP	ASO	O&MN	-		-		9,000	
h NEW SPARES						N/A								
i REPAIR PARTS						N/A								
j TECH MANUALS PREP						GAC	NATSF	APN-1	19,940					
k DOCUMENTATION REPRO & DISTR						NPPSO	NATSF	APN-1	2,000					
l MAINTENANCE PLAN						N/A								
m INTERIM SUPPORT						N/A								
n SUPPORT EQUIPMENT						GAC	AIR-552	APN-1	6,490					
o SUPPORT EQUIPMENT SPARES & REPAIR PARTS						N/A								
p NEW START DATA PKG DEPOT INTERSERVICING						N/A								

PREPARED BY	CODE	TELEPHONE NO	DATE	APPROVED BY	CODE	DATE
C. D. Elmore	AIR-4101B2	692-0030	11/8/79	R. L. Leydon	AIR-4101B	1/24/80

NAVAIR FORM 13051/4 (REV. 9 78)

Previous issues of this form are obsolete.

SAMPLE

MILESTONE CHART

☐ ATTRITION
☒ PRODUCTION
☒ RETROFIT

ECP/~~XXXXX~~ No. GR-E2C-281
ECP/~~XXXXX~~ Originator Grumman Aerospace Corp.
ECP/~~XXXXX~~ Sponsor AIR-59-31

Logistics Manager AIR-410182
Equipment WRA-37 Mod (Radar Revert)
OSIP No. N/A

CCB No. 801-119
TD No. AVC
TD Category Routine

ELEMENT	QTY BY FY			TASKED	FY 80			CY 80										FY 81			CY 81										FY 82			CY 82									
	80	81	82	ACTIVITY	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	D	N	O	J	F	M	A	M	J	J	A	S
1. PROCUREMENT																																								
a. CCB APPROVED				A-01D		▽																																		
b. CHANGE IMPLEMENTED				A-21412			▽																																	
2. PROD INCORP. (FIRST ARTICLE DELIVERED) A64				CAC																		▽																		
3. RETROFIT																																								
a. PRELIMINARY TO DISTRIBUTED				GAC																				▽																
b. PRINTED TO DISTRIBUTED				NPPSO																							▽													
c. TOOL KIT DELIVERY SCHEDULE				N/A																																				
d. BASIC EQUIP KIT DELIVERY SCHEDULE	57			CAC																								▽	10	10	10	10	10	7						
e. BASIC EQUIP MOD SCHEDULE			57	AIMD																									6	6	6	6	6	6	6	6	6	3		
f. DRAWINGS				GAC							▽																													
4. GFE DELIVERY SCHEDULE				N/A																																				
5. LOGISTICS SUPPORT																																								
a. TRAINING SCHEDULE				CAC																	▽																			
b. NAMT KIT DELIVERY SCHEDULE	1			CAC																							▽	1												
c. NAMT MODIFICATION SCHEDULE	1			DET 1026																								1												
d. WST/OT KIT DELIVERY SCHEDULE				N/A																																				
e. WST/OT MODIFICATION SCHEDULE				N/A																																				
f. SPARES KIT DELIVERY SCHEDULE	20			CAC																								▽	8	8	4									
g. SPARES MODIFICATION SCHEDULE			20	ASO																									4	4	4	4	4							
h. NEW SPARES DELIVERED				N/A																																				
i. REPAIR PARTS DELIVERED				N/A																																				
j. TECH MANUAL DATA PACKAGE DELIVERED				N/A																																				
k. TECH MANUALS DELIVERED				NPFSO																	▽																			
l. INTERIM SUPPORT SCHEDULE				N/A																																				
m. SUPPORT EQUIPMENT				CAC																					▽															
n. SUPPORT EQUIP SPARES & REPAIR PARTS				N/A																																				
o. SUPPLY DATA DELIVERED				GAC									▽																											
p. NEW START DATA PACKAGE DELIVERED				N/A																																				
q. NEW START DEPOT INTERSERVICE DECISION				N/A																																				

SAMPLE

REMARKS

NAVAIR FORM 13061/5 (REV. 8-78)

Previous issues of this form are obsolete.

APPENDIX D

SAMPLE ASO BUDGET FOR APN-6 MOD INITIAL/REPLENISHMENT ACCOUNTS

ALLOTMENT
FY81 APN 6 MOD I

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.0

STATUS OF FUNDS REPORT
COLLARS IN THOUSANCS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECO	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
YT018	MDO SPARES	6964	200	0	200	.0	200	0	200	0	0	0	0
	SUBT FY81 APN 6 MOD I	6964	200	0	200	.0	200	0	200	0	0	0	0
TOTAL		6964	200	0	200	.0	200	0	200	0	0	0	0

ALLOTMENT FY81 APN 6 REPL	AS OF 0730 MONDAY 08-02-81 DAY 81039 PERCENT OF FY - 35.8	STATUS OF FUNDS REPORT DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
YR0DA	A-4	7639	6765	780	5985	10.2	6765	1141	5624	361	980	1341	2121
YR0OF	F-4	19996	19287	744	18543	3.7	19287	12071	7216	11327	7943	19270	20014
YR02H	H-1	9028	7988	3402	4586	37.6	7988	8391	403-	4989	506	5495	8897
YR0BH	H-2	12577	11146	1728	9410	13.7	11146	21848	10702-	20120	7844	27964	29692
YR0DH	H-3	3627	3211	664	2547	18.3	3211	1409	1802	745	1753	2498	3162
YR0MH	H-46	10263	9096	909	8187	8.8	9096	2356	6740	1447	2291	3738	4647
YR0QH	H-53	10159	8997	1010	7987	9.9	8997	1497	7500	487	4385	4872	5882
YR02Y	AWG-10	3009	2663	1923	740	63.9	2663	2265	398	342	601	943	2866
YR05A	SCW1 PICA-SICA	50	50	13	37	26.0	50	13	37	0	0	0	13
YR0TD	TRNG DEV	41	29	176	147-	429.2	29	747	718-	571	858	1429	1605
YR03A	SCW1 MISC	2595	2595	574	2021	22.1	2595	688	1907	114	1102	1216	1790
YR24A	MOD F O	6708	3492	253	3239	3.7	3492	3482	10	3229	6662	9891	10144
*18RA	BR MOD FO	8328	0	0	0	.0	0	0	0	0	0	0	0
*18RB	BR PEPLEN	2089	0	0	0	.0	0	0	0	0	0	0	0
	SUBT SCW1 APA REPL	96109	75319	12176	63143	12.6	75319	55908	19411	43732	34925	78657	90833
YR0EN	J-52	737	737	6160	5723-	876.5	737	6460	5723-	0	0	0	6460
YR0NN	J-79	316	316	152	164	48.1	316	152	164	0	0	0	152
YR0QN	TF-41	1116	1116	1652	536-	148.0	1116	4290	3174-	2638	1084	3722	5374
YR0SN	TF-34	293	293	1912	1619-	652.5	293	2020	1727-	108	818	926	2838
YR0UN	AV8-F402	190	190	16600	16410-	736.8	190	20223	20033-	3623	169	3792	20332
YR02Q	TR30P6/P8	81	81	767	686-	946.9	81	767	686-	0	26	26	793
YR08Q	T53	15	15	4	11	26.6	15	62	47-	58	0	58	62
YR0DQ	T56	276	276	1825	1549-	661.2	276	2518	2242-	693	126	819	2644
YR0EQ	T58	1479	1479	2611	1132-	176.5	1479	2637	1158-	26	167	193	2804
YR0FQ	T64	259	259	1653	1394-	638.2	259	1656	1397-	3	266	269	1922
YR0NQ	T400	155	155	1281	1126-	826.4	155	1309	1154-	28	17	45	1326
YR0PQ	TF30-P412	524	524	5275	4751-	6.6	524	5973	5449-	698	317	1015	6290
YR038	SCW2 MISC	55231	39382	6533	32849	11.8	39382	6583	32799	50	376	426	6959
YR24B	MOD F O	0	0	0	0	-	0	0	0	0	0	0	0
YR05B	SCW2 PICA-SICA	4824	4824	2671	2153	55.3	4824	2671	2153	0	0	0	2671
	SUBT SCW2 APA REPL	65496	49647	49396	251	75.4	49647	57321	7674-	7925	3366	11291	60687
YR0LC	C130	6737	5493	2624	2869	38.9	5493	3168	2325	544	1613	2157	4781
YR0CJ	A5	3713	3028	0	3020	.0	3028	0	3028	0	0	0	0
YR0BM	BQM-34	413	335	13	322	3.1	335	60	275	47	66	113	126

ALLOTMENT
FY81 APN 6 REPL

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

CONTINUED

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
YR?EM	AQM-37	0	0	0	0	-	0	0	0	0	0	0	0
YR?GM	MQM-74	206	168	0	168	.0	168	0	168	0	47	47	47
YR?8T	T2	309	251	0	251	.0	251	84	167	84	0	84	84
YR?JZ	ARC-159	275	214	83	131	30.1	214	102	112	19	139	157	240
YR?KZ	ARN-52	0	0	0	0	-	0	0	0	0	0	0	0
YR?LZ	TACAMO	1822	1486	188	1298	10.3	1486	500	986	312	626	938	1126
YR?NZ	APN-141	0	0	0	0	-	0	0	0	0	0	0	0
YR?PZ	APN-153	0	0	0	0	-	0	0	0	0	0	0	0
YR?TZ	ARN-84	67	53	83	30-	123.8	53	106	53-	23	256	279	362
YR?WZ	APN-194	206	168	72	96	34.9	168	112	56	40	0	40	112
YR?ZZ	ALQ-126	1238	1008	163	845	13.1	1008	220	788	57	36	93	256
YR?5C	SCW3 PICA-SICA	2366	2366	727	1639	30.7	2366	787	1579	60	78	138	865
YR24C	MOD F O	1056	375	0	375	.0	375	0	375	0	57	57	57
YR?3C	SCW3 MISC	16764	15265	4648	10617	27.7	15265	6529	8736	1881	12393	14274	18922
*18RC	8R MOD FO	1175	0	0	0	.0	0	0	0	0	0	0	0
*18RD	8R PEPLEN	2200	0	1	1-	.0	0	1	1-	0	121	121	122
	SUBT SCW3 APA REPL	38547	30210	8602	21608	22.3	30210	11669	18541	3067	15431	18498	27100
YR?2D	A1E SCW4	0	0	0	0	-	0	0	0	0	0	0	0
YR?5D	SCW4 PICA-SICA	417	417	74	343	17.7	417	346	71	272	49	321	395
YR24D	MOD FO	0	0	0	0	-	0	0	0	0	0	0	0
YR?3D	SCW4	13815	10893	1672	9221	12.1	10893	3435	7458	1763	3587	5350	7022
*18RE	8R PEPLEN	61	0	0	0	.0	0	0	0	0	0	0	0
	SUBT SCW4 APA REPL	14293	11310	1746	9564	12.2	11310	3781	7529	2035	3636	5671	7417
YR?GA	A7	26069	20580	1615	18965	6.1	20580	2946	17634	1331	11691	13022	14637
YR?5E	WLW1 PICA-SICA	121	123	0	123	.0	123	0	123	0	0	0	0
YR?3E	WLW1 MISC	800	714	135	579	16.8	714	251	463	116	1097	1213	1348
YR24E	MOD F O	11877	8965	9750	785-	82.0	8965	10717	1752-	967	1246	2213	11963
*18RF	8R PEPLEN	229	0	0	0	.0	0	101	101-	101	0	101	101
	SUBT WLW1 APA REPL	39097	30382	11500	18882	29.4	30382	14015	16367	2515	14034	16549	28049
YR?PF	F-14	33081	31769	9199	22570	27.8	31769	17876	13893	8677	3622	12299	21458
YR?CY	AWG-9	2535	2280	674	1606	26.5	2280	896	1384	222	6954	7176	7850
YR?SZ	CAINS	5852	5102	1444	3658	24.6	5102	2192	2910	748	841	1589	3033
YR?5F	WLW2 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
YR?3F	WLW2 MISC	0	0	49	49-	-	0	49	49-	0	0	0	49

ALLOTMENT
FY81 APN 6 REPL

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

CONTINUED

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
YR24F	MOD F O	1643	150	0	150	.0	150	0	150	0	0	0	0
•18RG	BR MOD	67	0	0	0	.0	0	0	0	0	0	0	0
•18RH	BR PEPLEN	9099	0	0	0	.0	0	0	0	0	5418	5418	5418
	SUBT WLW2 APA REPL	52277	39301	11366	27935	21.7	39301	21013	18288	9647	16835	26482	37848
YR08P	P3	20047	19346	2069	17277	10.3	19346	4452	14894	2383	6517	8900	10969
YR05G	WLW3 PICA-SICA	0	0	1	1-	-	0	1	1-	0	1	1	2
YR03G	WLW3 MISC	1408	1240	212	1028	15.0	1240	260	980	48	347	395	607
•18RJ	BR PEPLEN	5349	0	0	0	.0	0	0	0	0	1377	1377	1377
YR24G	MOD F O	6733	2300	0	2300	.0	2300	465	1835	465	0	465	465
	SUBT WLW3 APA REPL	33537	22886	2282	20604	6.8	22886	5178	17708	2896	8242	11138	13420
YR0CS	S3	15472	12274	5492	6782	35.4	12274	7371	4903	1879	7669	9548	15040
YR05H	WLW4 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
YR24H	MOD F O	0	0	0	0	-	0	0	0	0	0	0	0
YR03H	WLW4 MISC	749	206	0	206	.0	206	0	206	0	0	0	0
•18RK	BR PEPLEN	18	0	0	0	.0	0	0	0	0	0	0	0
	SUBT WLW4 APA REPL	16239	12480	5492	6988	33.8	12480	7371	5109	1879	7669	9549	15040
YR02J	ATE WLW5	0	0	699	699-	-	0	717	717-	18	0	18	717
YR08Y	VAST	3754	3416	295	3121	7.8	3416	491	2925	196	442	638	933
YR05J	WLW5 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
YR24J	MOD F O	0	0	0	0	-	0	0	0	0	0	0	0
YR03J	WLW5 MISC	2208	1654	132	1522	5.9	1654	132	1522	0	71	71	203
	SUBT WLW5 APA REPL	5962	5070	1126	3944	19.8	5070	1340	3730	214	513	727	1853
YR0FA	A6	20177	15937	3632	12305	18.0	15937	7094	8843	3462	5946	9408	13040
YR0FE	EA6	18985	15171	5807	9364	30.5	15171	18741	3570-	12934	2610	15544	21351
YR05K	WLW6 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
YR03K	WLW6 MISC	570	371	0	371	.0	371	67	304	67	0	67	67
YR24K	MOD F O	31201	5070	0	5070	.0	5070	0	5070	0	0	0	0
•18RM	BR MOD	96	0	0	0	.0	0	0	0	0	28600	28600	28600
•18RN	BR PEPLEN	195	0	0	0	.0	0	0	0	0	0	0	0
	SUBT WLW6 APA REPL	71224	36549	9439	27110	13.2	36549	25902	10647	16463	37156	53619	63058

ALLOTMENT FY81 APN 6 REPL — AS OF 0730 MONDAY 08-02-81 — DAY 81039 PERCENT OF FY - 35.8 — CONTINUED

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
YR08E	E2/C2	1044	782	799	17-	76.5	782	1138	356-	339	559	898	1697
YR0EE	E2	23986	18732	2404	16328	10.0	18732	5696	13036	3292	6919	10211	12615
YR05L	WLW7 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
YR03L	WLW7 MISC	0	0	0	0	-	0	0	0	0	0	0	0
YR24L	MOD F O	3731	1275	0	1275	.0	1275	0	1275	0	3730	3730	3730
•18RP	8R PEPLLN	3	0	0	0	.0	0	0	0	0	0	0	0
	SUBT WLW7 APA REPL	28764	20789	3203	17586	11.1	20789	6834	13955	3631	11208	14839	18042
YR0KA	AV-8A	1283	1061	698	363	54.4	1061	1131	70-	433	507	940	1638
YR05M	WLW8 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
YR24M	MOD F O	241	75	0	75	.0	75	0	75	0	0	0	0
YR03M	WLW8 MISC	0	0	0	0	-	0	2	2-	2	0	2	2
•18RR	8R PEPLEN	33	0	0	0	.0	0	0	0	0	0	0	0
	SUBT WLW8 APA REPL	1557	1136	698	438	44.8	1136	1133	3	435	507	942	1640
YR0AC	"A" LEDGER	0	0	0	0	-	0	0	0	0	0	0	0
YR00C	RECLAMATION	0	0	320	320-	-	0	320	320-	0	0	0	320
YR018	FIELD	5153	5047	53	4994	1.0	5047	53	4994	0	0	0	53
YR05Z	UNMATCHED CR	0	0	0	0	-	0	0	0	0	0	0	0
YR066	OP RESERVE	20845	20845	0	20845	.0	20845	0	20845	0	0	0	0
YR088	T38/FSE ETC	2279	1973	49	1924	2.1	1973	49	1924	0	0	0	49
YR0RD	UNDISTRIBUTED	124562	0	0	0	.0	0	0	0	0	0	0	0
TOTAL		615939	362944	117448	245496	19.0	362944	211887	151057	94439	153522	247961	365409

ALLOTMENT
FY80 APN 6 MOD I

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION.	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
XT018	ICP-ASO	2158	2158	1325	833	61.3	2158	1596	562	271	146	417	1742
	SUBT FY80 APN 6 MOD I	2158	2158	1325	833	61.3	2158	1596	562	271	146	417	1742
TOTAL		2158	2158	1325	833	61.3	2158	1596	562	271	146	417	1742

ALLOTMENT
FY80 APN 6 REPL

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
XR00A	A-4	0	0	9610	9610-	-	0	9716	9716-	106	24	130	9740
XR0BF	F-4	0	0	3048	3048-	-	0	3052	3052-	4	91	95	3143
XR12H	H-1	0	0	13764	13764-	-	0	14759	14759-	995	23	1018	14782
XR0BH	H-2	0	0	10824	10824-	-	0	11195	11195-	371	0	371	11195
XR0OH	H-3	0	0	2863	2863-	-	0	2924	2924-	61	90	151	3014
XR0MH	H-46	0	0	4157	4157-	-	0	4415	4415-	258	44	302	4459
XR0QH	H-53	0	0	2293	2293-	-	0	2459	2459-	166	0	166	2459
XR02Y	AWG-10	0	0	2031	2031-	-	0	2031	2031-	0	0	0	2031
XR05A	SCW1 PICA-SICA	44	95	75	20	170.4	95	75	20	0	0	0	75
XR0TD	TRNG	0	0	1170	1170-	-	0	1284	1284-	114	0	114	1284
XR03A	SCW1 MISC	25570	0	343	343-	1.3	0	343	343-	0	0	0	343
XR06A	MOD PAYBACK	9857	0	0	0	.0	0	0	0	0	0	0	0
XR24A	MOD F D	12028	0	6094	6094-	50.6	0	7207	7207-	1113	0	1113	7207
	SUBT SCW1 APA REPL	47499	95	56272	56177-	118.4	95	59460	59365-	3188	272	3460	59732
XR0EN	J-52	0	0	1849	1849-	-	0	1852	1852-	3	98	101	1950
XR0NN	J-79	0	0	1038	1038-	-	0	1160	1160-	122	0	122	1160
XR0QN	TF-41	0	1000	5636	4636-	-	1000	5762	4762-	126	0	126	5762
XR0SN	TF-34	0	0	1132	1132-	-	0	1432	1432-	300	0	300	1432
XR0UN	AVB-F402	0	0	2310	2310-	-	0	2310	2310-	0	0	0	2310
XR02Q	TF30 P6/P8	0	0	52	52-	-	0	52	52-	0	0	0	52
XR0BQ	T-53	0	0	114	114-	-	0	114	114-	0	0	0	114
XR0OQ	T-56	0	0	578	578-	-	0	627	627-	49	0	49	627
XR0EQ	T-58	0	0	9843	9843-	-	0	9864	9864-	21	95	116	9959
XR0FQ	T-64	0	0	1473	1473-	-	0	1473	1473-	0	0	0	1473
XR0HQ	T400	0	0	799	799-	-	0	804	804-	5	0	5	804
XR0PQ	TF30 P412	0	0	4007	4007-	-	0	4007	4007-	0	0	0	4007
XR05B	SCW2 PICA-SICA	3280	4147	3675	472	112.0	4147	3712	435	37	0	37	3712
XR03B	SCW2 MISC	21511	0	829	829-	3.8	0	982	982-	153	10	163	992
XR24B	MOD F D	0	0	0	0	-	0	0	0	0	0	0	0
	SUBT SCW2 APA REPL	24791	5147	33335	28188-	134.4	5147	34151	29004-	816	203	1019	34354
XR0LC	C-130	0	0	5933	5933-	-	0	6154	6154-	221	12	233	6166
XR0CJ	A-5	0	0	1-	1	-	0	1-	1	0	0	0	1-
XR0OM	BQM-34	0	0	289	289-	-	0	289	289-	0	0	0	289
XR0EM	AQM-37	0	0	0	0	-	0	0	0	0	0	0	0

ALLOTMENT FY80 APN 6 REPL — AS OF 0730 MONDAY 08-02-81, DAY 81039, PERCENT OF FY - 35.8 — CONTINUED

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
XR0GM	MQM-74	0	0	8	8-	-	0	8	8-	0	0	0	8
XR08T	T2	0	0	0	0	-	0	0	0	0	0	0	0
XR0JZ	ARC 159	0	0	803	803-	-	0	803	803-	0	0	0	803
XR0KZ	ARM 152	0	0	10-	10	-	0	10-	10	0	0	0	10-
XR0LZ	TACAMO	0	0	549	549-	-	0	669	669-	120	0	120	669
XR0NZ	APN 141	0	0	0	0	-	0	0	0	0	0	0	0
XR0PZ	APN 153	0	0	0	0	-	0	0	0	0	0	0	0
XR0TZ	ARN 84	0	0	0	0	-	0	0	0	0	0	0	0
XR0WZ	APN 194	0	0	101	101-	-	0	101	101-	0	113	113	214
XR0ZZ	ALQ 126	0	0	926	920-	-	0	936	936-	16	0	16	936
XR05C	SCW3 PICA-SICA	3500	2408	2284	124	65.2	2408	2303	105	19	0	19	2303
XR03C	SCW3 MISC	10603	0	9683	9683-	91.3	0	10307	10307-	624	143	767	10450
XR06C	MOD PAYBACK	1718	0	10-	10	-	0	10-	10	0	0	0	10-
XR24C	MOD F O	1650	0	268	268-	16.2	0	268	268-	0	0	0	268
	SUBT SCW3 APA REPL	17471	2408	20317	18409-	119.1	2408	21817	19409-	1000	266	1268	22085
XR02D	ATE SCW4	0	0	360	360-	-	0	360	360-	0	0	0	360
XR05D	SCW4 PICA-SICA	342	211	193	18	56.4	211	222	11-	29	0	29	222
XR24D	MOD FO	2079	0	335	335-	16.1	0	761	761-	426	68	494	829
XR03D	SCW4 MISC	5752	0	7881	7881-	137.0	0	8186	8186-	305	161	466	8347
	SUBT SCW4 APA REPL	8173	211	8769	8558-	107.2	211	9529	9318-	760	229	989	9758
XR0GA	A7	0	0	5752	5752-	-	0	5915	5915-	163	251	414	6166
XR05E	WLW1 PICA-SICA	861	123	98	25	11.3	123	98	25	0	0	0	98
XR03E	WLW1 MISC	5864	0	203	203-	3.4	0	203	203-	0	0	0	203
XR06E	MOD PAYBACK	3738	0	0	0	.0	0	0	0	0	0	0	0
XR24E	MOD F O	1846	0	5528	5528-	299.4	0	5554	5554-	26	0	26	5554
	SUBT WLW1 APA REPL	12309	123	11581	11458-	94.0	123	11770	11647-	189	251	440	12021
XR0PF	F-14	0	0	21087	21087-	-	0	21218	21218-	131	145	276	21363
XR0CY	AWG9 F14	0	0	2415	2415-	-	0	2495	2495-	80	0	80	2495
XR0SZ	CAINS	0	0	6723	6723-	-	0	6747	6747-	24	0	24	6747
XR05F	WLW2 PICA-SICA	62	0	0	0	.0	0	0	0	0	0	0	0
XR03F	WLW2 MISC	27676	0	0	0	.0	0	0	0	0	0	0	0
XR06F	MOD PAYBACK	84	0	0	0	.0	0	0	0	0	0	0	0
XR24F	MOD F O	0	0	0	0	-	0	0	0	0	0	0	0

ALLOTMENT AS OF 0730 MONDAY 08-02-81 CONTINUED STATUS OF FUNDS REPORT
FY80 APN 6 REPL DAY 81039 PERCENT OF FY - 35.8 DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
	SUBT WLW2 APA REPL	27822	0	30225	30225-	108.6	0	30460	30460-	235	145	380	30605
XR08P	P-3	0	0	13573	13573-	-	0	13826	13326-	253	631	884	14457
XR05G	WLW3 PICA-SICA	240	0	0	0	.0	0	0	0	0	0	0	0
XR03G	WLW3 MISC	8921	0	277	277-	3.1	0	277	277-	0	0	0	277
XR06G	MOD PAYBACK	1270	0	0	0	.0	0	0	0	0	0	0	0
XR24G	MOD F O	4470	0	3303	3303-	73.8	0	3363	3363-	60	0	60	3363
	SUBT WLW3 APA REPL	14901	0	17153	17153-	115.1	0	17466	17466-	313	631	944	18097
XR0CS	S-3	0	0	23264	23264-	-	0	23453	23453-	189	463	652	23916
XR05H	WLW4 PICA-SICA	75	0	0	0	.0	0	0	0	0	0	0	0
XR24H	MOD F O	4470	0	0	0	.0	0	0	0	0	0	0	0
XR03H	WLW4 MISC	21259	0	0	0	.0	0	0	0	0	0	0	0
	SUBT WLW4 APA REPL	25804	0	23264	23264-	90.1	0	23453	23453-	189	463	652	23916
XR02J	ATE WLW5	0	0	624	624-	-	0	672	672-	48	120	168	792
XR08Y	VAST	0	0	1335	1335-	-	0	1493	1493-	158	115	273	1608
XR05J	WLW5 PICA-SICA	10	0	0	0	.0	0	0	0	0	0	0	0
XR24J	MOD F O	0	0	0	0	-	0	0	0	0	0	0	0
XR03J	WLW5 MISC	5084	0	302	302-	5.9	0	311	311-	9	99	108	410
	SUBT WLW5 APA REPL	5094	0	2261	2261-	44.3	0	2476	2476-	215	334	549	2810
XR0FA	A-6	0	0	25619	25619-	-	0	26405	26405-	786	668	1454	27073
XR0FE	EA-6	0	0	23975	23975-	-	0	24094	24094-	119	577	696	24671
XR05K	WLW6 PICA-SICA	75	0	0	0	.0	0	0	0	0	0	0	0
XR03K	WLW6 MISC	56065	0	63	63-	.1	0	77	77-	14	0	14	77
XR06K	MOD PAYBACK	296	0	0	0	.0	0	0	0	0	0	0	0
XR24K	MOD F O	793	0	388	388-	48.9	0	388	388-	0	0	0	388
	SUBT WLW6 APA REPL	57229	0	50045	50045-	87.4	0	50964	50964-	919	1245	2164	52209
XR08E	C2/E2	0	0	1194	1194-	-	0	1229	1229-	35	79	114	1308
XR0EE	E-2	0	0	30139	30139-	-	0	30380	30380-	241	277	518	30657
XR05L	WLW7 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
XR03L	WLW7 MISC	28758	0	0	0	.0	0	0	0	0	0	0	0

ALLOTMENT FY80 APN 6 REPL — AS OF 0730 MONDAY 08-02-81 — DAY 81039 PERCENT OF FY - 35.8 — CONTINUED — STATUS OF FUNDS REPORT — DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
XR06L	MOD PAYBACK	54	0	0	0	.0	0	0	0	0	0	0	0
XR24L	MOD F D	2387	0	2312	2312-	96.8	0	2312	2312-	0	0	0	2312
	SUBT WLW7 APA REPL	31199	0	33645	33645-	107.8	0	33921	33921-	276	356	632	34277
XR0KA	AV-8A	0	0	436	436-	-	0	478	478-	42	0	42	478
XR05M	WLW8 PICA-SICA	0	0	0	0	-	0	0	0	0	0	0	0
XR24M	MOD F O	0	0	0	0	-	0	0	0	0	0	0	0
XR03M	WLW8 MISC	665	0	17	17-	2.5	0	17	17-	0	0	0	17
	SUBT WLW8 APA REPL	665	0	453	453-	68.1	0	495	495-	42	0	42	495
XR01C	P/N PROC	22968	273083	3174	269909	13.8	273083	3174	269909	0	0	.0	3174
XR2F0	MOD FOLLOW ON	25200	20725	0	20725	.0	20725	0	20725	0	0	0	0
XR00C	RECLAMATION	0	0	269	269-	-	0	269	269-	0	0	0	269
XR0AC	'A' LEDGER	0	0	57	57-	-	0	57	57-	0	0	0	57
XR09M	PWRS MOB	10000	0	128	128-	1.2	0	128	128-	0	0	0	128
XR099	TESTING	0	0	431	431-	-	0	431	431-	0	0	0	431
XR066	OP PESERVE	23756	0	0	0	.0	0	0	0	0	0	0	0
XR05Z	UNMATCHED CR	0	0	244-	244	-	0	244-	244	0	0	0	244-
XR018	FIELD	0	468	466	2	-	468	466	2	0	0	0	466
TOTAL		854881	302260	292101	10159	34.1	302260	300243	2017	8142	4397	12539	304640

ALLOTMENT
FY79 APN 6 MOD I

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL U C I
WT01B	MOD SPARES	9407	9400	9400	0	99.9	9400	9400	0	0	0	0	9400
	SUBT FY79 APN 6 MOD I	9407	9400	9400	0	99.9	9400	9400	0	0	0	0	9400
TOTAL		9407	9400	9400	0	99.9	9400	9400	0	0	0	0	9400

ALLOTMENT F79 APN 6 REPL — AS OF 0730 MONDAY 08-02-81, DAY 81039, PERCENT OF FY - 35.8

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL U C I
WR0DA	A-4	0	8000	7870	130	-	8000	7870	130	0	0	0	7870
WR0BF	F-4	0	0	5908	5908-	-	0	5908	5908-	0	0	0	5908
WR02H	H-1	0	0	5636	5636-	-	0	5636	5636-	0	0	0	5636
WR0BH	H-2	0	0	4353	4353-	-	0	4353	4353-	0	0	0	4353
WR0DH	H-3	0	7000	6719	281	-	7000	6719	281	0	0	0	6719
WR0MH	H-46	0	0	4429	4429-	-	0	4429	4429-	0	0	0	4429
WR0QH	H-53	0	0	5924	5924-	-	0	5924	5924-	0	0	0	5924
WR02Y	AWG-10	0	0	1642	1642-	-	0	1642	1642-	0	0	0	1642
WR0TD	TRNG DEV	0	0	1168	1168-	-	0	1168	1168-	0	0	0	1168
WR03A	5CW1 MISC	0	0	551	551-	-	0	551	551-	0	0	0	551
	SUBT 5CW1 APA REPL	0	15000	44200	29200-	-	15000	44200	29200-	0	0	0	44200
WR0EN	J-52	0	10000	14666	4666-	-	10000	14666	4666-	0	0	0	14666
WR0NN	J-79	0	0	547	547-	-	0	548	548-	1	0	1	548
WR0QN	TF-41	0	0	6981	6981-	-	0	6981	6981-	0	0	0	6981
WR0SN	TF-34	0	0	1838	1838-	-	0	1838	1838-	0	0	0	1838
WR0UN	AV8-F402	0	0	1060	1060-	-	0	1060	1060-	0	0	0	1060
WR02Q	TF30P6/P8	0	0	500	500-	-	0	500	500-	0	0	0	500
WR0BQ	T53	0	0	10	10-	-	0	10	10-	0	0	0	10
WR0DQ	T56	0	25000	3059	21941	-	25000	3059	21941	0	0	0	3059
WR0EQ	T58	0	0	8037	8037-	-	0	8037	8037-	0	0	0	8037
WR0FQ	T64	0	0	594	594-	-	0	594	594-	0	0	0	594
WR0NQ	T400	0	0	671	671-	-	0	671	671-	0	0	0	671
WR0PQ	TF30 P412	0	0	2910	2910-	-	0	2910	2910-	0	0	0	2910
WR038	5CW2 MISC	0	0	3191	3191-	-	0	3191	3191-	0	0	0	3191
	SUBT 5CW2 APA REPL	0	35000	44064	9064-	-	35000	44065	9065-	1	0	1	44065
WR0LC	C130	0	0	9123	9123-	-	0	9123	9123-	0	0	0	9123
WR0CJ	A5	0	200	30	170	-	200	30	170	0	0	0	30
WR0BM	BQM-34	0	0	108	108-	-	0	108	108-	0	0	0	108
WR0EM	AQM-37	0	100	0	100	-	100	0	100	0	0	0	0
WR0GM	MQM-74	0	0	53	53-	-	0	53	53-	0	0	0	53
WR0BT	T2	0	0	0	0	-	0	0	0	0	0	0	0
WR0JZ	ARC-159	0	0	6002	6002-	-	0	6002	6002-	0	0	0	6002
WR0KZ	ARN-52	0	0	0	0	-	0	0	0	0	0	0	0
WR0LZ	TACAMO	0	0	1521	1521-	-	0	1521	1521-	0	0	0	1521

ALLOTMENT
F79 APN 6 REPL

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

CONTINUED

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL U C I
WR0NZ	APN-141	0	0	0	0	-	0	0	0	0	0	0	0
WR0PZ	APN-153	0	0	0	0	-	0	0	0	0	0	0	0
WR0TZ	ARN-84	0	0	695	695-	-	0	695	695-	0	0	0	695
WR0WZ	APN-194	0	0	0	0	-	0	0	0	0	0	0	0
WR0ZZ	ALQ-126	0	0	1548	1548-	-	0	1548	1548-	0	0	0	1548
WR03C	SCW3 MISC	0	0	10491	10491-	-	0	10493	10493-	2	0	2	10493
	SUBT SCW3 APA REPL	0	300	29571	29271-	-	300	29573	29273-	2	0	2	29573
WR03D	SCW4	0	0	6048	6048-	-	0	6048	6048-	0	108	108	6156
WR0GA	A7	0	0	4772	4772-	-	0	4772	4772-	0	0	0	4772
WR03E	WLW1 MISC	0	0	270	270-	-	0	270	270-	0	0	0	270
	SUBT WLW1 APA REPL	0	0	11090	11090-	-	0	11090	11090-	0	108	108	11198
WR0PF	F-14	0	0	33044	33044-	-	0	33044	33044-	0	0	0	33044
WR0CY	AWG9-F-14	0	3500	3559	59-	-	3500	3559	59-	0	0	0	3559
WR0SZ	CAINS	0	0	3898	3898-	-	0	3898	3898-	0	0	0	3898
WR03F	WLW2 MISC	0	0	4	4-	-	0	4	4-	0	0	0	4
	SUBT WLW2 APA REPL	0	3500	40505	37005-	-	3500	40505	37005-	0	0	0	40505
WR08P	P3	0	0	9237	9237-	-	0	9237	9237-	0	0	0	9237
WR03G	WLW3 MISC	0	0	1661	1661-	-	0	1661	1661-	0	90	90	1751
	SUBT WLW3 APA REPL	0	0	10898	10898-	-	0	10898	10898-	0	90	90	10988
WR0CS	S3	0	26000	25218	782	-	26000	25218	782	0	0	0	25218
WR03H	WLW4 MISC	0	0	127	127-	-	0	127	127-	0	0	0	127
	SUBT WLW4 APA REPL	0	26000	25345	655	-	26000	25345	655	0	0	0	25345
WR08Y	VAST	0	1000	796	204	-	1000	796	204	0	0	0	796
WR03J	WLW5 MISC	0	0	627	627-	-	0	627	627-	0	0	0	627
	SUBT WLW5 APA REPL	0	1000	1423	423-	-	1000	1423	423-	0	0	0	1423

ALLOTMENT
F79 APN 6 REPL

AS OF 0730 MONDAY 08-02-81
DAY 81039 PERCENT OF FY - 35.8

CONTINUED

STATUS OF FUNDS REPORT
DOLLARS IN THOUSANDS

ACC	DESCRIPTION	ANNUAL OBLIG PLAN	OBLIG AUTH RECD	OBLIG TO DATE	UNOBL BAL	OBLI PLAN PCT	COMIT AUTH RECD	COMIT TO DATE	UNCOM BAL	OUTSTG COMITS	OUTSTG INITS	TOTAL OUTSTG	TOTAL O C I
WR0FA	A6	0	0	18037	18037-	-	0	18037	18037-	0	0	0	18037
WR0FE	EA6	0	0	22014	22014-	-	0	22014	22014-	0	0	0	22014
WR03K	WLW6 MISC	0	0	127	127-	-	0	127	127-	0	0	0	127
	SUBT WLW6 APA REPL	0	0	40178	40178-	-	0	40178	40178-	0	0	0	40178
WR0BE	E2/C2	0	0	1822	1822-	-	0	1822	1822-	0	0	0	1822
WR0EE	E2	0	13000	11855	1145	-	13000	11855	1145	0	0	0	11855
WR03L	WLW7 MISC	0	0	180	180-	-	0	180	180-	0	0	0	180
	SUBT WLW7 APA REPL	0	13000	13857	857-	-	13000	13857	857-	0	0	0	13857
WR0KA	AV-8A	0	0	1242	1242-	-	0	1242	1242-	0	0	0	1242
WR03M	WLW8 MISC	0	0	0	0	-	0	0	0	0	0	0	0
	SUBT WLW8 APA REPL	0	0	1242	1242-	-	0	1242	1242-	0	0	0	1242
WR01C	P/N PROC	0	181223	4468	176755	-	181223	4468	176755	0	0	0	4468
WR0OC	RECLAMATION	0	0	232	232-	-	0	232	232-	0	0	0	232
WR0AC	"A" LEDGER	0	0	559-	559	-	0	559-	559	0	0	0	559-
WR09M	MOBILIZATION	0	0	7963	7963-	-	0	7963	7963-	0	220	220	8183
WR01B	FIELD	0	295	295	0	-	295	295	0	0	0	0	295
WR2FO	MOD FO	13753	13753	13077	676	95.0	13753	13077	678	0	0	0	13077
TOTAL		13753	289071	287849	1222	92.9	289071	287852	1219	3	418	421	288270

APPENDIX E

ASO FY 81 AND 82 BUDGET PROJECTIONS FOR APN-6 FUNDS WITH BREAKOUTS FOR MOD INITIAL AND MOD FOLLOW-ON

APN-6
FY81 INITIAL (In $ Millions)

WEAPON/ CATEGORY	TOTAL INITIAL FUNDS	MAGa			CVa		OTHER			TOTAL RETAIL	WHOLESALE
EA6B	6.309	-0-			4.827	1 CV	.938	Whidbey Is.	3a/c	5.765	.544
F14A	7.104	-0-			3.335	1 CV	1.009	Miramar	12a/c	5.574	1.530
							1.230	Oceana	14a/c		
P3C	4.947	-0-			-0-		1.021	Brunswick	11a/c	4.466	.481
							2.150	Rotational	7a/c		
							.522	Moffett	1a/c		
							.202	2 TBI's			
							.197	4 Module Caddy Kits			
							.374	12 In Flight Kits			
E2C	4.942	-0-			2.013	1 CV	1.090	Miramar	4a/c	4.484	.458
							1.248	Norfolk	6a/c		
							.133	1 TBI			
EC130	.392	-0-			-0-		.309	Agana	3a/c	.309	.083
CH53E	20.320	-0-			-0-		2.787	Norfolk	2a/c	17.057	3.263
							5.417	Sigonella	8a/c		
							3.299	Cubi Pt	4a/c		
							4.894	DETs			
							.496	TBIs			
							164	CER			
F18	57.529	4.766	El Toro	12a/c	18.193	3CV's	.393	Pax River	2a/c	42.290	15.239
							.250	China Lake	1a/c		
							5.883	Lemoore	31a/c		
							6.521	Cecil Field	24a/c		
							2.140	Fallon	24a/c		
							.423	Subic POS			

APN-6

FY81 INITIAL (In $ Millions) (Cont'd)

WEAPON/ CATEGORY	TOTAL INITIAL FUNDS	MAGs	CVs	OTHER		TOTAL RETAIL	WHOLESALE
				2.537	TBI's		
				1.184	CER's		
SUB TOTAL	101.543	4.766	28.368	46.811		79.945	21.598
CSE	20.213					16.144	4.069
MOD	6.964					5.664	1.300
TOTAL	128.720					101.753	26.967

APN-6
FY81 REPLENISHMENT (In $ Millions)

WEAPON/ CATEGORY	TOTAL REPLENISHMENT FUNDS	MAGS			CVs		OTHER			TOTAL RETAIL	WHOLESALE
F14	24.638	-0-			24.638	1CV	-0-			24.638	
P3C	.630	-0-			-0-		.630	Brunswick	36-39a/c	.630	
E2C	4.349	-0-			3.651	1CV (ARPs pec)	.698	Miramar	12-13a/c	4.349	
CH53E	5.709	.740 1.109	Tustin Futema	12-15a/c 5a/c	-0-		.613 .614 1.154 .738 .741	Contractor Norfolk Sigonella Cubi Pt 3 DETS	1a/c 3a/c 8a/c 5a/c	5.709	
SUB TOTAL	35.326	1.849			28.289		5.188			15.326	-0-
GSE	34.813									34.813	
MOD	72.856									72.856	
SUB TOTAL	142.995									142.995	
Initiatives	74.484									74.484	
Basic Replen	263.015										263.015
PWR	10.300										10.300
TOTAL	490.794									217.479	273.315

APN-6

FY82 INITIAL (In $ Millions)

WEAPON/ CATEGORY	TOTAL INITIAL FUNDS	MAG's		CV's		OTHER			TOTAL RETAIL	WHOLESALE
A6E	4.497	3.794	Cherry Pt 7 a/c	-0-		-0-			3.794	.703
EA6B	4.606	-0-		2.747	1CV	1.677	Whidbey Ia	3a/c	4.424	.182
P3C	.760	-0-		-0-		.557	Rotational	9a/c	.664	.096
						.067	9 In-Flight Kits			
						.022	1 TBI			
						.018	1 Module Caddy Kit			
F14	6.003	-0-		3.139	1CV	.571	Miramar	7a/c	4.580	1.423
						.870	Oceana	12a/c		
E2C	4.373	-0-		2.392	1CV	1.459	Miramar	6a/c	4.092	.281
						.241	4 TBIs			
EC130Q	.118	-0-		-0-		.072	Alameda	4a/c	.072	.046
F18	205.009	12.772	El Toro 12 a/c	47.580	2CVs	1.133	Pax River	2a/c	129.191	75.818
						17.471	Lemoore	37a/c		
						20.293	Cecil Field	27a/c		
						6.192	Fallon	24a/c		
						1.225	Subic POS	-		
						9.516	CSPs	1@12		
						8.570	TBIs	7		
						3.439	CERs	-		
						1.000	Provisioning	-		

APN-6

FY82 INITIAL (In $ Millions) (Continued)

WEAPON/ CATEGORY	TOTAL INITIAL FUNDS	MAGs	CVs	OTHER	TOTAL RETAIL	WHOLESALE
SUB TOTAL	225.366	16.566	55.858	74.393	146.817	78.549
GSE	20.909				16.727	4.182
MOD	9.810				7.848	1.962
TOTAL	256.085				171.392	84.693

APN-6

FY82 REPLENISHMENT (In $ Millions)

CATEGORY	TOTAL REPLENISHMENT FUNDS	MAG's		CV's		OTHER		TOTAL RETAIL	WHOLESALE
EA6B	3.500			3.474	1 CV @ 4a/c (ICAP pec)	.026	Whidbey Is 29-33 a/c	3.500	
E2C	21.541			14.325	1 CV @ 4a/c	7.216	Miramar 13-20 a/c	21.541	
F18	44.664	5.056	El Toro 12a/c	19.126	2 CVs @ 24a/c	.415	Pax River 13-15 a/c		
						.264	China Lake 6-8 a/c		
						6.115	Lemoore 48-79 a/c		
						7.038	Cecil Fld 24 a/c		
						2.269	Fallon 3-27 a/c		
						.448	Subic POS		
						2.691	TBI's		
						1.242	CER's	44.664	
CH53E	29.357	3.804	Tustin 12-15 a/c			3.153	Contractor 1 a/c		
		5.701	Futema 5 a/c			3.158	Norfolk 3 a/c		
		3.809	Packups			5.938	Sigonella 8 a/c		
						3.794	Cubi Pt 5 a/c	29.357	
SH2F	5.607					.349	Norfolk 34-36 a/c		
						5.258	Packups	5.607	
SUB TOTAL	104.669	18.370		36.925		49.374		104.669	
SH60B (common items)	3.811							3.811	
GSE *	36.242							30.242	
MOD **	60.682							60.682	

APN-6
FY82 REPLENISHMENT (In $ Millions) (Continued)

WEAPON/ CATEGORY	TOTAL REPLENISHMENT FUNDS	MAG's	CV's	OTHER	TOTAL RETAIL	WHOLESALE
SUB TOTAL	199.404				199.404	
BASIC REPLENISHMENT	383.487					383.487
TOTAL	582.891				199.404	383.487

APN-6
FY81 INITIAL
MOD

	RETAIL	WHOLESALE
A7 Digital Scan	.445	.112
A7 AM Flaps	.751	.190
E2 Safety Mods	.092	.023
F4 IMP Warning System	.125	.031
H-1 APR39	.090	.023
H46 HH46 A to C CILOP	.020	.005
H53 APR39	.274	.068
P3 DICAS	.719	.061
C130 Tacamo Tip II	2.601	.650
EC130 SLEP	.547	.137
	5.664	1.300

APN-6
FY81 REPLENISHMENT
MOD

A6	Tram		28.602
A6	CAINS/CNI		2.392
A6	AMTI		.096
A6	Arresting Hook		.005
A6	A6E to KA6D		.765
EA6	EA6A Update		.551
EA6	EA6B ALE 41 (Prov)		.034
EA6	EA6B ALE 39		.025
EA6	EA6B ALE 39		.017
A7	A7 ARN-84/ARN-118		.131
A7	A7 FLIR		11.877
A7	A7 ALE 39		.067
AV8	AV8C CILOP		.204
AV8	Emergency Power		.037
F4	F4J to S		1.775
F8	F8 ALE 39		.012
F14	Carbon Brake		.309
F14	Hydr. Aux. Brake		.205
OV10	OV10 ALE 39		.090
H46	CH46E		4.362
H46	H46 ALE 39		.100
H53	H53 ALE 39		.352
H1	Tow Mod		1.030
H2	SH-2 Avionics		8.013
P3	Teletype		.149
P3	TACNAV		2.696
P3	P3 FLIR		1.598
P3	Harpoon		.709
P3	P3B Instr. Update		.176
EP3	EP3 SLEP		1.405
E2	ARPS		3.731
C130	C130 CILOP		.164
C130	KC130 CILOP		.133
Various	ALR 45		1.044
		Total	72.856

APN-6
FY82 INITIAL
MOD

		RETAIL	WHOLESALE
A4	APR-43	.266	.067
OA4	APR-43	.068	.016
A6	Weapon Sys Update	.512	.128
EA6	APS-130	1.320	.330
A7	APR-43	1.407	.352
F4	Alum. Hydr. Lines	.038	.009
F4	APR-43	.863	.216
H53	APP Disc Clutch	.137	.035
H-3	SH-3H	2.584	.645
P-3	IACS	.361	.090
EC130	SLEP	.292	.074
		7.848	1.962

APN-6

FY82 REPLENISHMENT

MOD

A3	ALE 41	.105
A3	ARC 153	.240
A3	CARRIER BASED ESM	.240
A6	TRAM	20.909
A6	CAINS/CNI	3.583
A6	VDI	1.155
A6	LDG. IMPROVEMENTS	.093
A6	WEAPON SYS. IMPR.	.078
A6	A-6E to KA-6D	.319
EA6	EA-6B ALE-39	.031
EA6	EA-6A ALE-39	.029
EA6	EA-6 ASN-92	.652
EA6	EA-6 ASN-123	.885
A7	A-7 ARN-84/118	.073
A7	FLIR	9.195
A7	A-7 ALE-39	.087
A7	DIGITAL SCAN	1.743
A7	AMF	.341
A7	TA to ETA-7	1.000
AV8	AV-8C CILOP	1.316
F4	F4-J TO S	.433
F4	F-4 DAA	.073
F4	F-4 ARN-118	.465
F8	F-8 ALE-39	.020
F8	F-8 APN-194	.023
F14	CARBON BRAKES	.133
F14	AUX. BRAKE PUMP	.095
H46	H-46 ALE-39	.081
H46	HH-46A TO D	.020
H46	H-46 ARN-118	.064
H46	H-46 APR-39	.003
H53	ELASTOMERIC HEADS	5.054
H53	H-53 ALE-39/APR-39	.387
H2	AVIONICS UPDATE	.611
P3	TACNAV	1.813
P3	IRDS	.725
P3	DICASS/3V	.323
P3	HARPOON	2.295
P3	INSTR. UPDATE	.177
EP3	EP-3 SLEP	1.933
E2	ARPS	2.350
E2	ECP-046	.054
C130	C-130 CLEP	.127
C130	KC-130 SLEP	.916
FEWSG	RA-3 to FEWSG	.433
TOTAL		60.682

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An analytical review of the management of modification funds in the Naval aviation community.